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DEVELOPMENT AND EXPERIMENTAL APPLICATION OF  
INTERNATIONAL AFFAIRS INDICATORS

Volume A  
Final Report

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GENERAL ASSESSMENT OF  
RESEARCH ACCOMPLISHED AND FINDINGS  
FOR FY 1974

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## SUMMARY AND CONCLUSIONS

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CACI, Inc., has fulfilled all the research tasks specified in its contract. Several advances in the development and use of quantitative indicators were made during the year. New indicators of potential use in the defense and intelligence communities were designed, techniques for estimating the future were developed and tested, and the techniques and indicators were applied to the intelligence functions of indications/warning and estimating. To provide data for these efforts, an enlarged coding system was developed and a new source of data--the Foreign Broadcast Information Service Bulletin for Asia and the Pacific (FBIS)--was coded.

The major conclusion to be drawn from the past year's effort is that the intelligence community has become increasingly aware of the potential usefulness of quantitative indicators. The community is beginning to understand that a system of quantitative indicators can be helpful at all levels of intelligence tasks.

### RESEARCH IN INDICATOR DEVELOPMENT

The focus of research in indicator development was on indicators of internal phenomena that are related to external relations, indicators of issue positions and policy style for specific issues, and modification of the style indicator so that it clearly reflects the occurrence of particular types of events. These research activities were based on the belief that a greatly enlarged bundle of indicators must be available to intelligence analysts if indicators are to assist the analysts in their tasks.

Many internal political indicators were constructed. They include an index of political fractionalization, indices of internal style and relations for major internal actors, and a measure of regime support by primary subgroups. The internal style index was used in an estimate of Japanese military choices.

It was used to measure the behavior style of leftist and centrist opposition groups toward the government and to make inferences about the political stability of Japan.<sup>1</sup>

Issue-related indicators were designed to identify trends in issue positions and in policy style for specific issues. The belief that underlies these developments is that an actor's position or style on a specific issue may differ from its general policy position and style. An analyst can be aided by looking at both general and issue-specific indicators. The issue position indicator was used in the Japan estimate to identify possible consequences of change in the relative strength of government and opposition parties.<sup>2</sup>

Research was also undertaken to modify the style indicator so that it reflects the occurrence of particular kinds of events. The original policy style indicator displays the quality of the actions of one country toward another. It gives direct evidence, drawn from the recording of actual events, of the intent of the actor country. A modified policy style indicator, style q, was developed to increase the sensitivity of the policy style indicator to extraordinarily conflictive events. The new measure reaches an extremely negative level if and only if one or more very negative types of events occur. This initial effort to bring some indication of event type into an aggregated indicator is considered exploratory.<sup>3</sup>

Basic to the research effort was the revision of CACI's Defense Events Coding System (DECS). The new system includes World Event/Interaction Survey (WEIS) codes for international events, new codes to record internal events, issue codes to identify the issue to which an event pertains, and a detailed set of codes for subnational actors. The source used for the

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<sup>1</sup> The estimate is presented in section IIA of this report. The development of internal indicators is discussed in section VIIG.

<sup>2</sup> Section VIIF describes the development of issue-related indicators. Section IIC illustrates several uses of these indicators.

<sup>3</sup> The style indicator is described in section VIIE of this report.

event data in the new system was the FBIS. This source was also used to ascertain the impact of a richer data base on indicators.<sup>4</sup>

### RESEARCH IN ESTIMATING

Essential to the intelligence function is the ability to estimate future trends and events. Two methods of forecasting were developed and tested during the year. Each method uses event-based indicators to estimate the future pattern of the indicators.

One technique estimates the likelihood of different amounts and directions of change in a nation's policy style toward another nation. The probabilities for future change are contingent on the prior trend and variation in policy style. Relationships between prior style and subsequent changes were discovered in an analysis of WEIS data for 31 country-dyads for the period 1966-1972. The technique was tested and applied in the case of Japan and its relations with the United States, Soviet Union, and People's Republic of China.<sup>5</sup>

A second technique of estimating is based on Markov chain analysis. A Markov model incorporates probabilities for transition between different states and patterns in a relationship between two nations. Transition probabilities are calculated from historical records and then are used as a basis to forecast short-term future patterns. This technique was applied to the Czech crisis of 1968.<sup>6</sup>

### APPLICATION

Three projects were accomplished in which quantitative indicators were applied to the warning and indications functions of intelligence. In the

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<sup>4</sup> The coding system is described in section VI. Section V contains a comparison of the FBIS and New York Times as data sources.

<sup>5</sup> The initial development of the method is described in section VIID of this report. Refinements and tests of the method are discussed in section IIB.

<sup>6</sup> Section III contains this application.

first effort, several types of quantitative indicators were applied to a period in the spring of 1971 preceding the Indo-Pakistani War which occurred at the end of that year. They presented, in graphic form, a situation that was worsening at an accelerated rate.<sup>7</sup>

A second effort involved an initial attempt to explore the feasibility of integrating quantitative political indicators with military indicators. The specific information conveyed by the military indicators was not known to CACI because of security considerations. However, by examining the military and political indicators, it was apparent that when they were presented together, the shifts in the political trend line contributed greatly to an understanding of the causes of major shifts in certain military indicators.<sup>8</sup>

The third application of indicators to early warning concerned the Czech crisis of 1968. Quantitative indicators were used to assess the developing situation and to make short-term estimates of changes in patterns of relations between the Soviet Union and Czechoslovakia. The Markov technique was used to determine whether this method could assist an indications and warning analyst in predicting hostile developments in a deteriorating situation. The projected changes in patterns were similar to the actual changes that occurred. The technique does not attempt to specify precisely the time at which changes in patterns will occur. Thus, while the predicted and actual patterns were comparable, the predicted and actual times of occurrence were not the same.<sup>9</sup>

An initial application of quantitative indicators to estimating was also undertaken. The effort was to apply existing developments to defense estimates in order to illustrate the approach and provide the defense intelligence community with a basis for evaluating it. Although progress in

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<sup>7</sup> This application is described in section VIIA.

<sup>8</sup> This effort is described in section IV.

<sup>9</sup> This research is described fully in section III.

developing quantitative indicators has been good, the indicators are still unable by themselves to produce estimates of many important types of phenomena. This situation has led to a method of implementation that synthesizes the new technology with the expertise of the intelligence analyst. Thus quantitative indicators and forecasting methods can be useful tools for an analyst; they can provide descriptive information about trends and relationships that are relevant to his area of concern, and they can provide forecasts of some variables that could affect the future of phenomena being estimated.

The future of Japanese military choices is an area of concern to U.S. policy. At present, there is no formal model that will estimate the likelihood of Japan's increasing its conventional forces beyond the minimum "self defense" concept, or that will estimate the probabilities of Japan's developing a military nuclear capability. However, quantitative indicators of international behavioral patterns and internal patterns that are relevant to Japan's choices do exist, as do previously tested methods of forecasting such patterns. The systematic use of this technology can be a useful input to the process of formulating an estimate for Japan.<sup>10</sup>

#### MAJOR FINDINGS

There are several important findings from this study that should be emphasized. They include:

- Predictive relationships exist between:
  1. Prior trends and subsequent changes in policy style and relations.
  2. The state of relations or style at one point in time and the state in the following period.

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<sup>10</sup> Section IIA is the Japan estimate. Section IID is an earlier effort to use quantitative indicators to evaluate an already existing estimate.

- Predictive relationships between prior trends and subsequent changes in policy style and relations show some stability, that is, they are applicable to cases not used in the initial discovery of the relationships.
- Periods of rapid improvement in policy style and relations tend to be followed by a moderate reversal in trend.
- Policy style and relations are often issue-dependent, that is, the style of one nation toward another may vary across issues.
- Relations and style can be forecast for particular issues.
- Data sources with a greater number of events produce style and relations indicators that have less variability.

### CONCLUSIONS

The important conclusions to be drawn from this study are:

- Quantitative political indicators can be a useful tool for the intelligence analyst. The trends, graphically depicted, contribute to his assessment of past and current events. These same trends can also be the basis for his calculating the future in probabilistic terms.
- Quantitative political indicators can be used by analysts in several functional areas of intelligence, namely, warning and indications, reporting of current developments, and estimating.
- The initial successes in the application of quantitative indicators to the intelligence function also pointed up some areas requiring further research and development. The most important of these are:
  - The relationship between certain internal activities in a nation and its international policy.
  - The manner in which economic indicators can be developed to complement political indicators.
  - The relationship between the policies of a nation relative to issues as compared to its general policy position.
  - Techniques for estimating the future.

- In addition, the initial success of using quantitative indicators in intelligence functions suggests that these indicators would be useful to the policy analyst. The indicator approach can be used to formulate the inputs to the decision process.

#### PROJECT STAFF

The following persons contributed to this report and participated in the research activities as technical analysts or support personnel. In addition to their general contributions, many had prime responsibility for specific subtasks and they are so noted on the several sections and subsections of the report. The technical research staff is as follows:

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## PROSPECTS FOR A MAJOR CHANGE IN JAPANESE MILITARY POLICY

A Demonstration of the Application of Quantitative Indicators  
to Intelligence Estimating

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## INTRODUCTION

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This section demonstrates the application of quantitative indicators to an intelligence estimative question: What is the likelihood of a major change in Japanese military policy over the next few years?

The effort was severely constrained by data limitations. The New York Times data covered the period 1966 through June 1973 and contained only international events. The data from the Foreign Broadcast Information Service Bulletin for Asia and the Pacific included internal as well as international events, but covered only the period 1971-1973. Thus it was impossible to bring to bear long-term data bases on either external or internal matters. Furthermore, many elements of Japanese society were not adequately covered by either source.

These data limitations are reflected in the example application of quantitative indicators to a general estimate of Japanese military policy. Internal factors considered were restricted to: 1) issue positions of the government and the opposition parties on selected issues, and 2) opposition party behavior style toward the government. Indicators of Japan's international posture were restricted to Japan's relations with the United States, the Soviet Union, and the People's Republic of China. The estimate was made for the very short-range future.

Despite the selective nature of the available indicators, this effort is an important initial step in applying quantitative indicators to intelligence estimating. Tools are displayed that can help an analyst understand and project future trends. He can use

graphics as shown below to present historical perspectives and estimates into the future--and thus shorten the text--or present his estimates in a traditional textual form.

The estimate is divided into two parts. First, there is a brief statement of the conclusions. Second, there is a discussion of the methodology and approach used and the factors that went into making the estimate.

## THE ESTIMATE

### Statement of the Problem

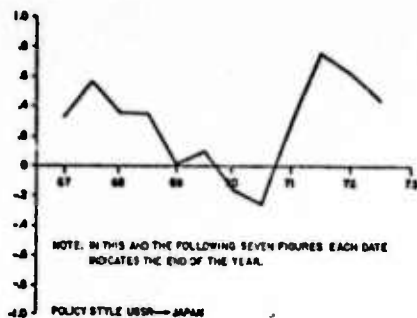
What is the likelihood that Japan will change it's military policy over the next few years? Will change include a substantial enlargement of the Self Defense Force (SDF)? the acquisition of a nuclear weapons capability? or an abrogation of the Mutual Security Treaty?

### Conclusions

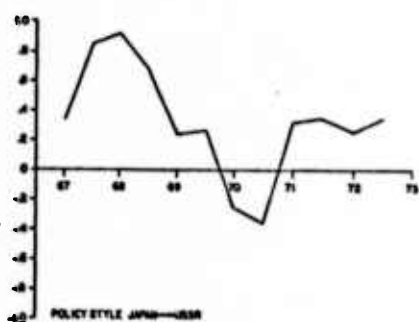
There are no indications that over the next few years there will be a significant change in Japan's posture with respect to conventional military forces or nuclear weapons. There is at least a slight chance for substantial change in or abrogation of the Security Treaty.

These conclusions are based on an analysis of a variety of international and internal factors. The effects of Japan's relations with the three major powers--the United States, the Soviet Union, and the People's Republic of China--are of central importance and therefore are summarized before the entire estimate is discussed.

There is little doubt that, at present, the two-way relationships between

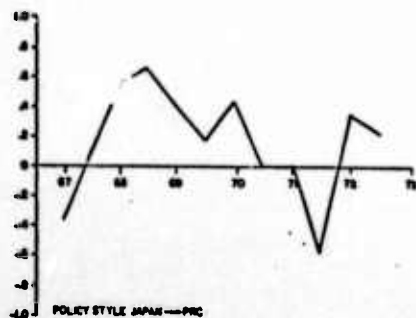
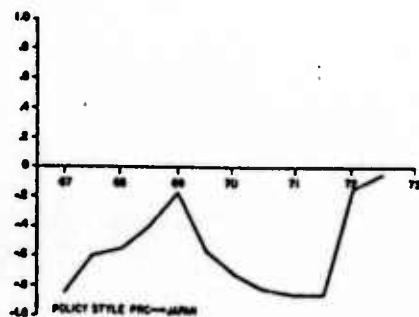


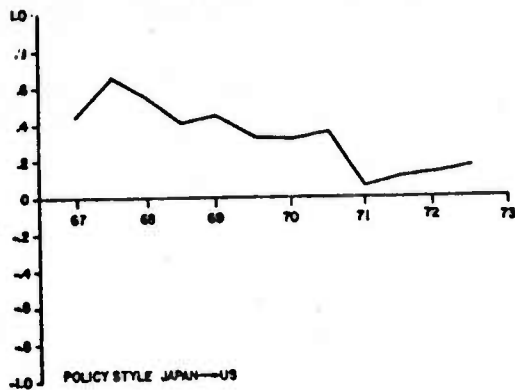
Japan and the People's Republic of China, the Soviet Union, and the United States are and will be very influential in the near future. The five figures presented here portray the state of these relationships from the end of 1967 through mid-1973.



It is readily apparent that by mid-1973, each of these relationships was on an upbeat course from the 1971 period. This history leads to the following conclusions:

- a. The Japanese Government did not feel pressured to improve its military capabilities;
- b. The Japanese Government did not feel compelled to acquire nuclear weapons.

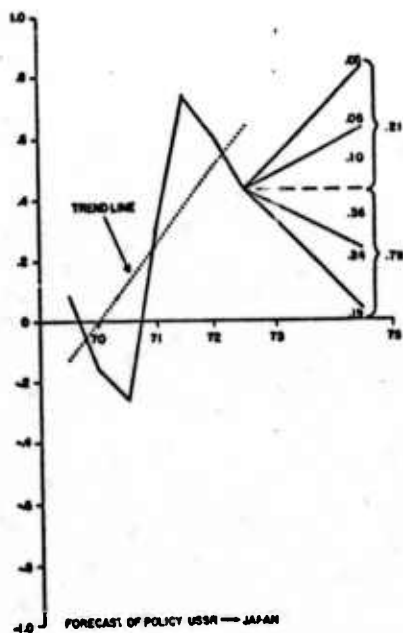




c. The Mutual Security Treaty seemed to continue to offer sound protection for Japan because, even though relations with China and the Soviet Union were becoming more friendly, neither relationship was securely and highly positive.

The following forecasts support these conclusions for the near-term future.

Turning to short-term forecasts, the figures depict highly positive



Soviet behavior style toward Japan from June 1970 to June 1973. The indicators are then projected into the future. (The data are adequate to support a forecast to mid-1975.)

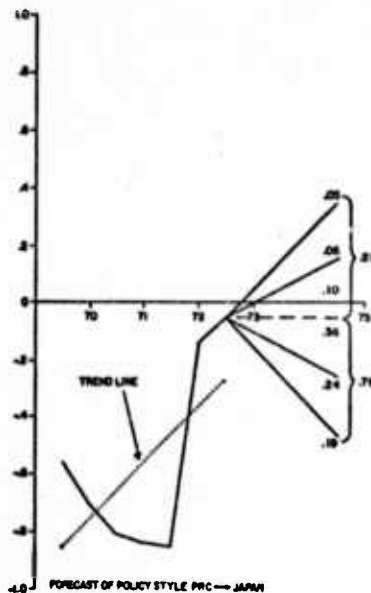
The likelihood that the Soviet attitude toward Japan will cool is high while the likelihood of a further increase in friendliness is low.

Based on past experience, a sharp change in policy style results, in the near term, in a subsequent reversal of direction in style. However, as shown

in the figure, Soviet policy through mid-1975 should diminish only moderately.

Continuing with the short-term forecast, the policy style of the People's

Republic of China toward Japan from June 1970 to June 1973 is shown with the indicator projected to mid-1975.

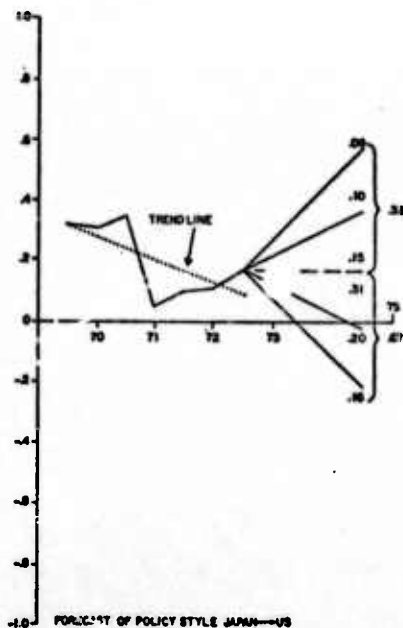


The likelihood that the behavior style of the People's Republic of China toward the Japanese will cool is .79, while the chances of an increase in friendliness reach .21. The forecast is for a modest downturn.

Unlike the Soviet figure, the policy style of the People's Republic of China is in the negative range but close enough to zero to make it more neutral than hostile.

The impact of U.S. style in relation to Japan is not, of course, projected.

Assuming a steady U.S. policy, Japanese style toward the United States suggests a downturn, .67 versus .33 in favor of a rise. The downturn will probably be only moderate.



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## DISCUSSION

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Japan's future decisions with respect to military capabilities will have a very important impact on its relationship with the United States and the U.S. position in the Far East. Thus an important task for the U.S. intelligence community is to estimate likely Japanese choices in this area and to input these estimates to the policy-planning process.

At present there is no formal model that will estimate the likelihood of Japan's increasing its conventional forces beyond the minimal Self Defense Force (SDF) concept or the probability of its developing a military nuclear capability. However, quantitative indicators of international and internal behavior patterns that are relevant to Japan's choices do exist, as do previously tested methods of forecasting such patterns. The systematic use of this technology can be a useful input to the process of formulating an estimate for Japan. This paper illustrates how the technology can be used.

## ASSUMPTIONS

Were Japan's military choices to be estimated by a formal model, two steps in formulating the model could be to determine its structure and to estimate its parameters. Structure encompasses hypothesized relationships among variables, while parameters identify specific numerical functions.

The method used herein identifies variables that could affect Japan's military choices, assumes the nature of the effects of these variables, utilizes quantitative technology to describe and forecast some of the predictors, and makes inferences about the likely outcomes from the assumptions, descriptions, and forecasts. No claim is made that all relevant predictors have been identified or that the assumed relationships are valid. The analyst is free to evaluate and modify the choice of variables and assumed relationships and to utilize his expertise to raise additional considerations. In

other words, he can use quantitative indicators and forecasting methods as he sees fit; but in every case their use will entail certain assumptions.

The following assumptions are used in this illustrative estimate. Each assumption in the first two sets (1 and 2) is ceteris paribus; i.e., the effects of variables are assumed to occur if everything else is held constant. Effects due to combinations and interactions of predictors are considered in the third set of assumptions (3).

1. The behavior of foreign nations toward Japan affects Japan's military choices.
  - 1a. A friendly pattern of Chinese behavior toward Japan (PRC→JAP) and Soviet behavior toward Japan (USSR→JAP) influences Japan to perceive less need for moving beyond the SDF concept and developing military nuclear capability, while the opposite pattern influences Japan toward these choices.
  - 1b. An increasingly friendly pattern of PRC→JAP and USSR→JAP behavior creates alternative opportunities for Japanese security and hence reduces the perceived need for the Mutual Security Treaty.
  - 1c. Increasing foreign trade in Asia and foreign investment in the world enhance the need for a credible military strength to protect these interests and therefore increase the likelihood of Japan's moving beyond the SDF concept.
  - 1d. U.S. behavior toward Japan is not forecast. However, it is useful to consider the potential effects of different developments in this area. A decreasingly friendly pattern of behavior from the United States toward Japan increases pressures for an independent international course and hence for abrogation or revision of the Mutual Security Treaty; a stable or more friendly pattern does not have that effect.
2. Internal political developments affect Japan's military choices.
  - 2a. An increase in strength in Japan's opposition parties enhances the likelihood that opposition policies will be implemented.

- 2b. Increasing internal instability in a nation encourages 1) foreign adventures which entail increasing foreign military strength, or 2) a focusing of attention on the internal situation. The latter possibility reduces the likelihood of military buildups for external purposes. In Japan's case there are few, if any, opportunities for foreign adventurism. Thus, an increase in internal instability reduces the chances for moving beyond the SDF concept and developing military nuclear capability.
- 2c. Increasingly favorable public attitudes toward the Soviet Union and China decrease the chance that Japan will go beyond the SDF concept or develop a military nuclear capability.
- 2d. Increasingly favorable public attitudes toward the Soviet Union and China decrease the publicly perceived need for the Mutual Security Treaty, and hence increase the likelihood of abrogation.
3. The above predictors and outcomes combine and interact to influence Japan's military choices. While they provide a basis for inferring Japan's choices due to relations with other powers, internal political developments, and trade and investment, the combined effects of patterns in these areas can also be considered. Assumption 3a deals with the combined effects of relations with the Soviet Union and China and Japan's international economic activity; assumption 3b pertains to combined effects of relations with these two powers and the United States; and assumption 3c deals with the combined effects of Japan's action on the Mutual Security Treaty and Japan's relations with the Soviet Union and China.
  - 3a. The effect of increasing foreign trade and investment on Japan's desire for a credible foreign military force would be tempered by a desire not to upset improved relations with China and the Soviet Union.
  - 3b. An increase in friendliness with the Russians and Chinese at the time of worsening relations with the United States would more rapidly propel Japan toward abrogating the Mutual Security Treaty than would either of the two occurrences individually.
  - 3c. If Japan chooses to maintain current security arrangements with the United States, then it is unlikely that any foreign threat from the Soviet Union or China would lead her to develop an independent military nuclear capability. If U.S. security arrangements are dropped, and if

subsequently there is a serious decline in Japan's relations with China or the Soviet Union, Japan could decide to develop military nuclear capability. Another option would be to negotiate security arrangements with the other major power.

#### INDICATORS

The predictors that have been identified as relevant to Japan's military choices include:

- The behavior of major powers toward Japan.
- Japanese public perceptions of external factors.
- The policy positions of internal political actors in Japan.
- Internal stability in Japan.
- Japan's international economic activity.

Quantitative indicators can be used to describe, and in some cases forecast, these predictors. The descriptions and forecasts can be used to make inferences about likely Japanese choices when the indicators are related to those choices through the assumptions given above.

#### Behavior of Major Powers Toward Japan

We assume that the behavior of the United States (Japan's postwar ally), the Soviet Union, and the People's Republic of China (Japan's postwar adversaries) is relevant to Japan's defense decisions. Presumably if Soviet and Chinese behavior toward Japan is not hostile but neutral or friendly, the Japanese Government's perceived need for a strong defense establishment, and for nuclear weapons, would not be great. Furthermore, continued good relations with the United States, particularly if the Mutual Security Treaty can be sustained, presumably means that Japan is protected under the American nuclear umbrella. This would in turn reduce Japan's incentive to acquire a military nuclear capability.

The following figures present policy style measures<sup>1</sup> of the Soviet Union and the Chinese toward Japan at semi-annual intervals from June 1970 to June 1973. These indicators were derived from events coded from the New York Times. Future values of the indicators are estimated for mid-1975.<sup>2</sup>

Figure 1 shows estimates of Soviet policy style toward Japan. The probability (p) of a fall in Soviet style from the June 1973 level is .79 while the probability of a rise is only .21. Thus we expect the style to drop only moderately by mid-1975 because the most probable magnitude of change ( $p = .36$ ) is within the 0.0 to  $-.2$  range from the present level. Not only is the most probable forecast only a slight decline in policy style, but the style would still remain positive (between .22 and .42).

The trend in policy style of China toward Japan (Figure 2) is similar to that of the Soviet Union. The forecast is for a downturn of style by mid-1975 ( $p = .79$  versus .21 for a rise). The most probable magnitude of the downturn is moderate. The probability is .36 that the drop will not exceed  $-.2$  units from the present level. Style would then be most likely to have a value between the present June 1973 value of  $-.06$  and  $-.26$ . Unlike Soviet style, Chinese style is in the negative rather than positive range; yet Chinese style is still close to zero, making it more neutral than hostile.

The figures demonstrate an important trend toward more friendly behavior from the Soviet Union and China toward Japan. The forecasts suggest there may be some moderate downturns in the trends, but they will not be serious enough to suggest reversal into hostility. These trends and projections, coupled with assumptions 1a and 1b, lead to the following inferences. By mid-1975 Japan's relations with the Soviet

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<sup>1</sup> The policy style indicator is discussed in sections IIB and VIIE of this report.

<sup>2</sup> The estimating method is described in section IIB of this report.

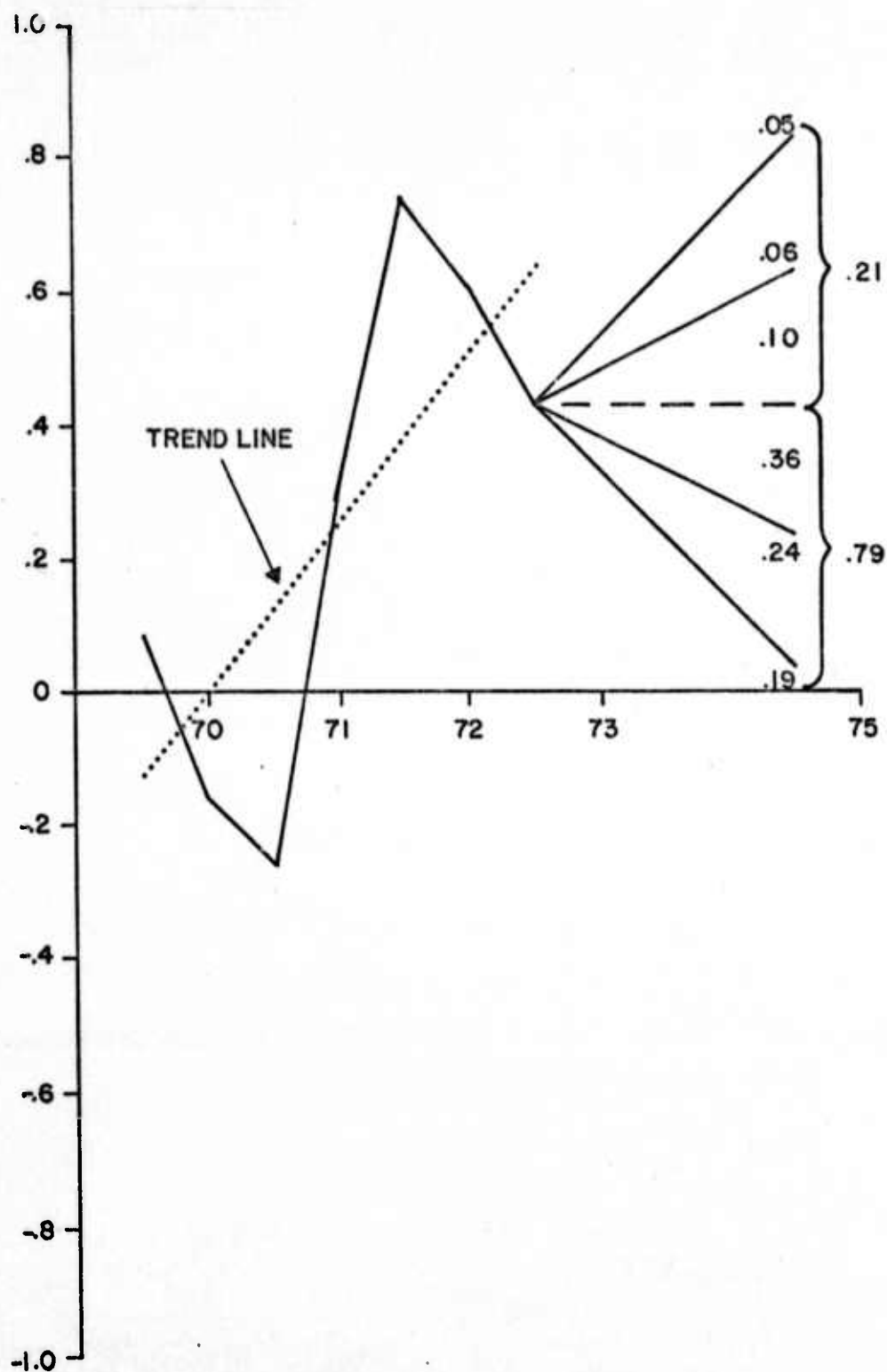


FIGURE 1. FORECAST OF POLICY STYLE USSR → JAPAN (MID-1975).

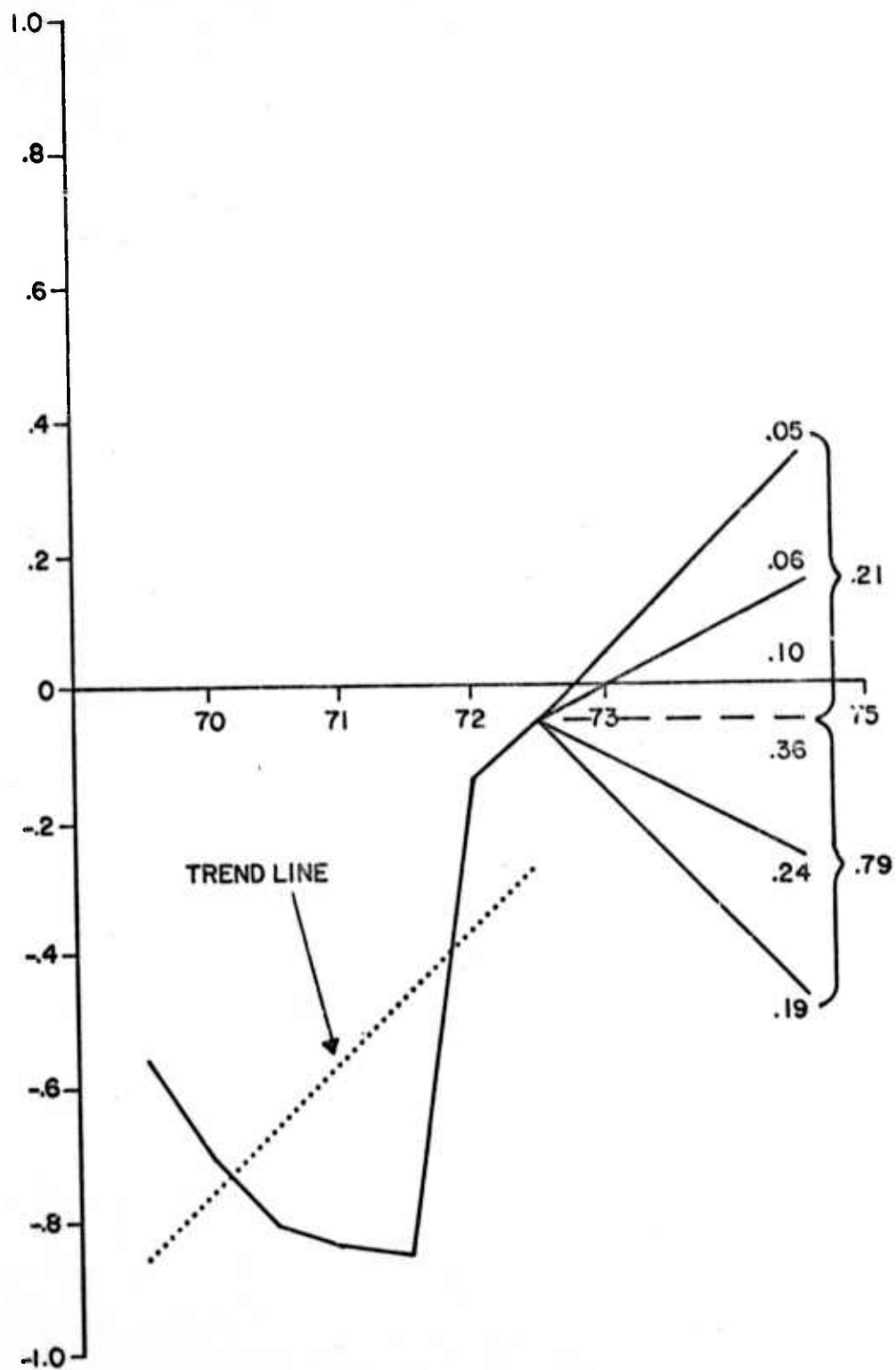


FIGURE 2. FORECAST OF POLICY STYLE PRC → JAPAN (MID-1975).

Union and China will probably not improve greatly over the current state; hence the Japanese will perceive much the same need as they now do for a military force to deter these two former antagonists. Neither will Soviet or Chinese behavior create a hostile atmosphere so that Japan would expand the SDF force. With respect to the Mutual Security Treaty, the level of friendliness between Japan and the two powers is not expected to increase to a point where Japan would feel it could rely on the Soviet Union or China for the security now obtained through the treaty. Thus, the projected relations with China and the Soviet Union are unlikely to cause abrogation.

The impact of U.S. behavior toward Japan is not projected. According to assumption 1d, a Japanese trend toward independence could result in the abrogation of the treaty if there were a serious decline in relations with the United States. But it does not appear that relations with China and the Soviet Union will improve at the same time that U.S.-Japanese relations might decline. Assumption 3b leads us to believe, therefore, that the chances for abrogation will be less than they would be if these simultaneous occurrences were probable.

The evidence thus far suggests that there will be no foreign threat serious enough to cause Japan to expand its SDF force or to construct a military nuclear capability in the near future. However, neither will Japan's foreign relations be so friendly that these possibilities could be ruled out altogether. On the matter of the Mutual Security Treaty, it is possible that a decline in relations with the United States would influence the Japanese to abrogate the treaty. U.S. behavior aside, Japan may well prefer to maintain the treaty in light of a relationship with China and the Soviet Union which is not securely friendly.

#### Japanese Public Perceptions of External Factors

To measure this factor we use an index of public opinion comparable in scale to the policy style indicator. This  $R_o$  index varies between +1 and -1.

The data are partial extractions from extensive monthly public opinion surveys conducted in Japan by the Jiji Press Ltd. The open-ended question is of the form: "Name 3 countries you like. Name 3 countries you don't like." Where a = % like, and b = % don't like, the index is computed as follows:

$$R_o = \frac{a-b}{a+b + \frac{100-(a+b)}{2}}$$

An opinion index is calculated for the United States, the Soviet Union and the People's Republic of China. This indicator weights neutral opinion [100-(a+b)] by one-half.

Figure 3 shows that Japanese public perceptions of the United States are expected to decline from mildly favorable to more neutral through mid-1975.<sup>3</sup> Perceptions of the People's Republic of China, after a rise into the positive area, are expected to rise slightly in the mildly friendly area. Data on the Soviet Union show an increasing trend away from negative perception.

Assumption 2c suggests that further military development, including development of military nuclear capability, is not likely to occur as a result of public perceptions of the Soviet Union and China. Assumption 2d indicates that public perceptions of the two nations will increasingly contribute to the chances for abrogation of the Security Treaty.

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<sup>3</sup> Projections are made by exponential smoothing, a statistical technique designed to forecast general tendencies (trends) using actual time series data. The program performs a cyclic analysis to identify any regularly recurring behavior as well as trend analysis to determine prevailing direction. The method produces a forecast on the assumption that past trends and cycles will continue.

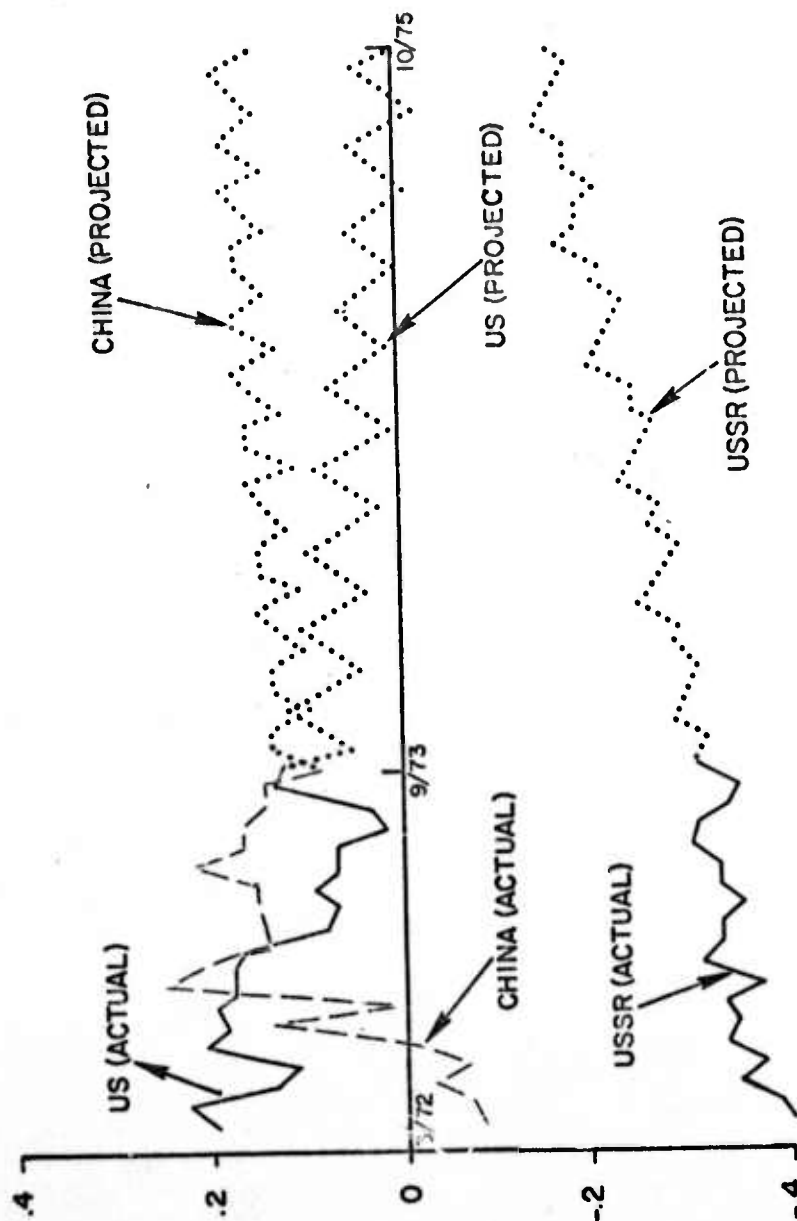


FIGURE 3. FORECAST OF PUBLIC PERCEPTIONS OF US, USSR, AND PRC.

## Policy Positions of Internal Political Actors in Japan

The issue positions of important political actors on military issues are also relevant to Japan's decisions. We will use the issue-position indicator to explore this area.<sup>4</sup>

Similar to the CACI policy style indicator, the issue-position indicator ranges from +1 to -1. This scale measures the net effects of the positive and negative statements about a particular issue. All issues presented are proposed changes in the status quo. For example, the development of nuclear weapons by Japan is an issue. In order to characterize opinion about that issue, it must be stated such that positions for or against the issue can be readily determined. Thus the issue of nuclear weapons would read, "Japan should develop a nuclear capability." A positive value on the indicator reflects agreement on the issue while a negative value reflects disagreement. The three military issues confronting Japan are

- Japan and the United States should not retain the Security Treaty for mutual defense.
- Japan should rebuild its military power beyond its self-defense state.
- Japan should develop a nuclear capability.

The actors we will consider are subnational actor groups within Japan. They are the Government and the opposition parties and coalitions.<sup>5</sup>

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<sup>4</sup> The issue-position indicator is discussed in section VIIF of this report.

<sup>5</sup> The current relative strength of the ruling and opposition parties can be inferred from the percentage of seats held by each in the House of Representatives as of the most current election (December, 1972): ruling party (LDP) = 55%; leftist opposition (JSP and JCP) = 32%; centrist opposition (CGP and DSP) = 10%. (LDP = Liberal Democratic Party; JSP = Japan Socialist Party; JCP = Japan Communist Party; CGP = Clean Government Party; DSP = Democratic Socialist Party).

The government actor category includes any member of the National Government's ministries or legislator identified with the ruling coalition. Opposition party members are identified as such regardless of their capacity. Opposition party membership could be disaggregated even further into specific parties if needed; however, the positions of each opposition party are so similar that this step was unnecessary.

The analysis presented here is in a time series format. The data points represent aggregations of FBIS-coded actions over 12-week periods in 1971-1973. For this reason, there are 13 data points for the 3-year period analyzed.

The divergence in positions of the Government and opposition parties is most notable on the Security Treaty issue (Figure 4). The Government's position is generally opposed to the abrogation of the treaty whereas the opposition consistently favors abrogation. Assumption 2a suggests that growing opposition party strength certainly would enhance the likelihood of abrogation of the treaty.

The positions of both the Government and the opposition parties are usually non-supportive of the development of a nuclear capability (Figure 5). However, the data show that the opposition parties are inexorably opposed to this development while the Government is more flexible. Thus it is possible that, at some future date, an LDP-led Government might not be as opposed to joining the nuclear club. At this writing, such a move is unlikely. Public opinion is running counter to this development and in fact is becoming more opposed. In a nation-wide Mainichi Press poll conducted in April 1972, only 35 percent of the respondents favored the eventual acquisition of nuclear weapons compared with 44 percent in April 1969. Conversely, 58 percent absolutely opposed the acquisition of nuclear weapons, an increase of 12 percentage points from 1969. Although these two polls hardly constitute a trend, the prospect of attaining a nuclear capability is such that it might not be politically feasible in the foreseeable future.

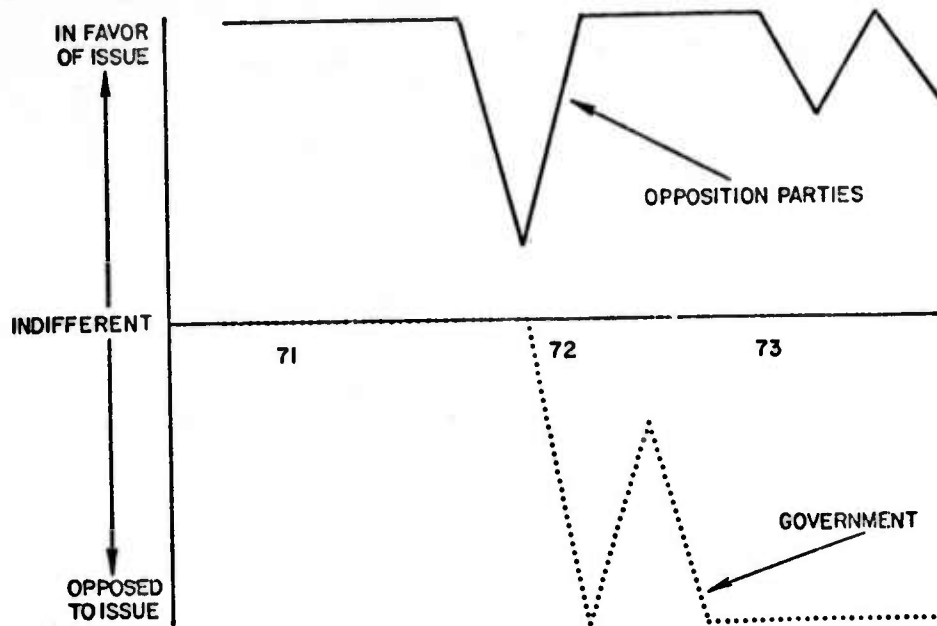


FIGURE 4. JAPAN AND THE US SHOULD NOT RETAIN A SECURITY TREATY FOR MUTUAL DEFENSE.

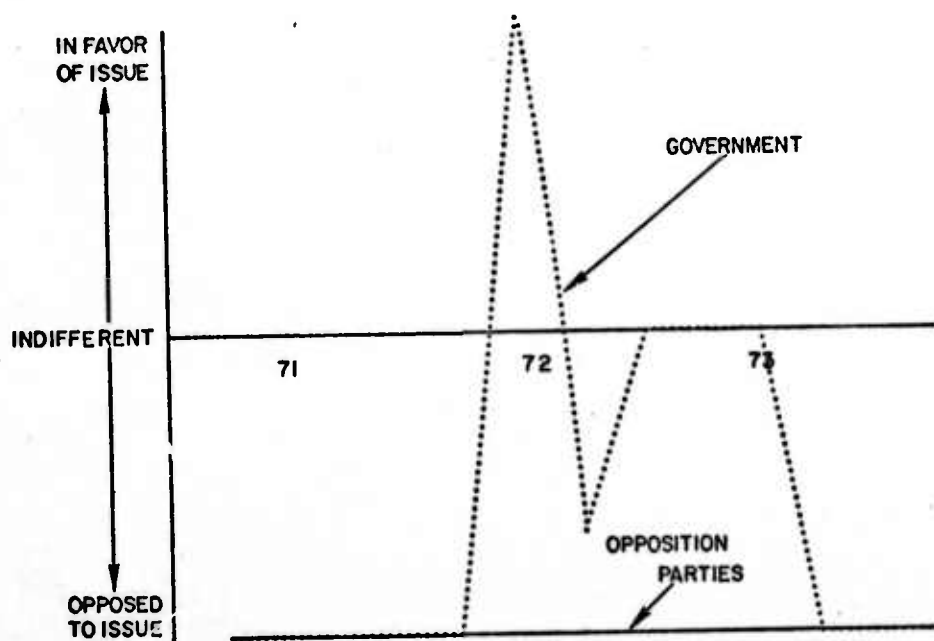


FIGURE 5. JAPAN SHOULD DEVELOP A NUCLEAR CAPABILITY.

While public opinion places constraints on the current Government, the indicators suggest, in conjunction with assumption 2a, that acquisition of a nuclear capability is even less likely if the opposition should come to power.

On the issue of expanding the SDF, the Government's position varies more than the opposition (Figure 6). As was the case on nuclear acquisition, a considerable amount of public opinion is opposed to the expansion of the SDF. In a nationwide poll by Central Research Services in November 1971, only 11 percent of the Japanese people favored an increase in the SDF while 53 percent wanted to keep the SDF at its present level, and 20 percent desired either reduction of the

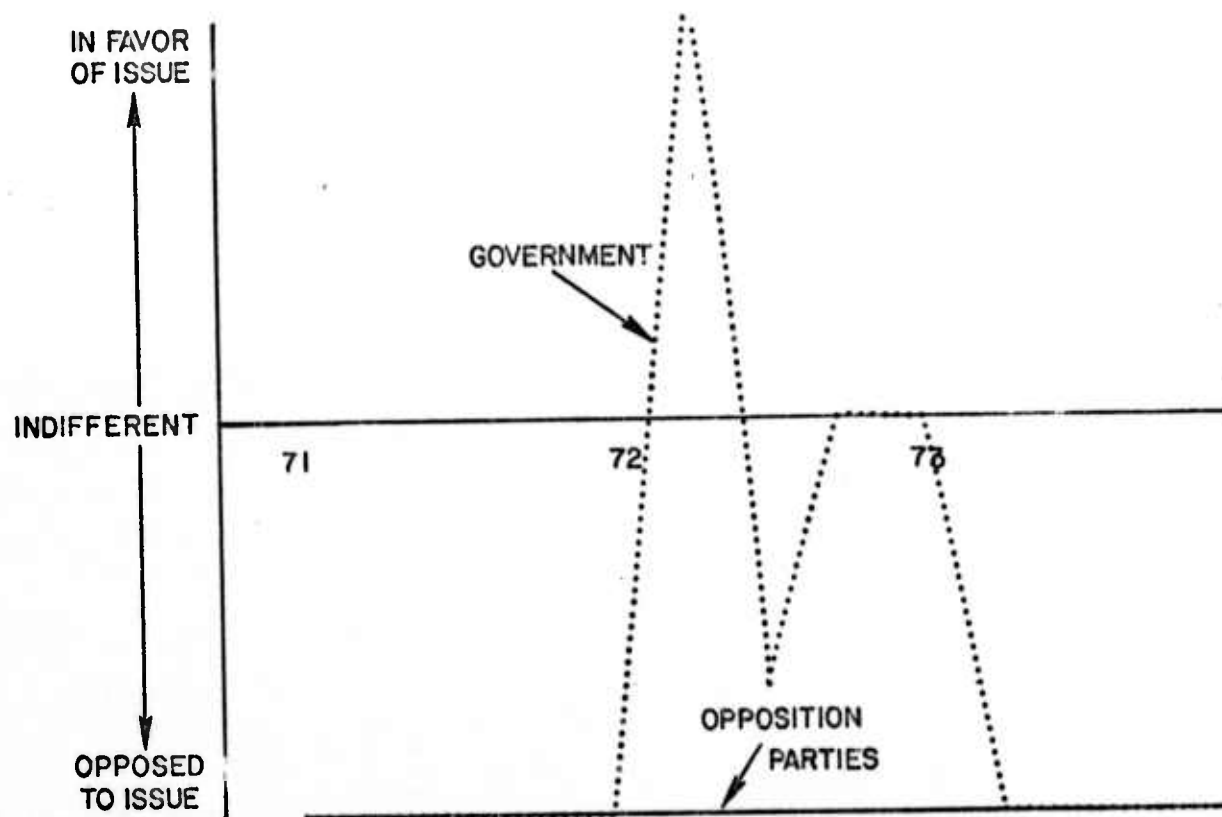


FIGURE 6. JAPAN SHOULD BUILD ITS MILITARY POWER BEYOND THE SELF DEFENSE STATE.

force or abolition of the SDF entirely. When compared to a similar survey done in February of 1970 in which 16 percent of the people interviewed desired an increase in the SDF, those in favor of increasing the SDF since then has decreased slightly. The majority opinion in favor of keeping the SDF at its present size has remained the same, 53 percent. Faced with this much opposition at home, the Japanese Government appears unlikely to alter radically the strength of the SDF unless there are major international developments leading to a change in public perceptions.

Thus, there are strong public constraints on the present Government that tend to prevent expansion beyond the SDF level. It is also clear, according to assumption 2a, that Japan would be even less likely to move beyond the SDF concept if the opposition parties were to gain in power.

#### Internal Stability in Japan

Two types of quantitative indicators based on FBIS data can be used to evaluate prospects for internal stability in Japan. The first type measures the behavior style of major internal actors toward the Government while the second measures the weighted occurrence of events that indicate instability.<sup>6</sup>

The behavior style of leftist and centrist opposition indicates the extent to which politics in Japan may or may not be tending toward increasing polarization and hostility. Figures 7 and 8 show the behavior style of leftist and centrist opposition toward the Government. The figures demonstrate that, while the styles of the opposition are generally negative, neither opposition group has been exclusively hostile toward the Government. Thus it appears that the opposition is flexible in its dealings with the Government even though on some issues discussed above, opposition positions are quite opposed to Government positions.

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<sup>6</sup> Section VIIG of this report discusses the internal behavior style measure and the index of domestic stability.

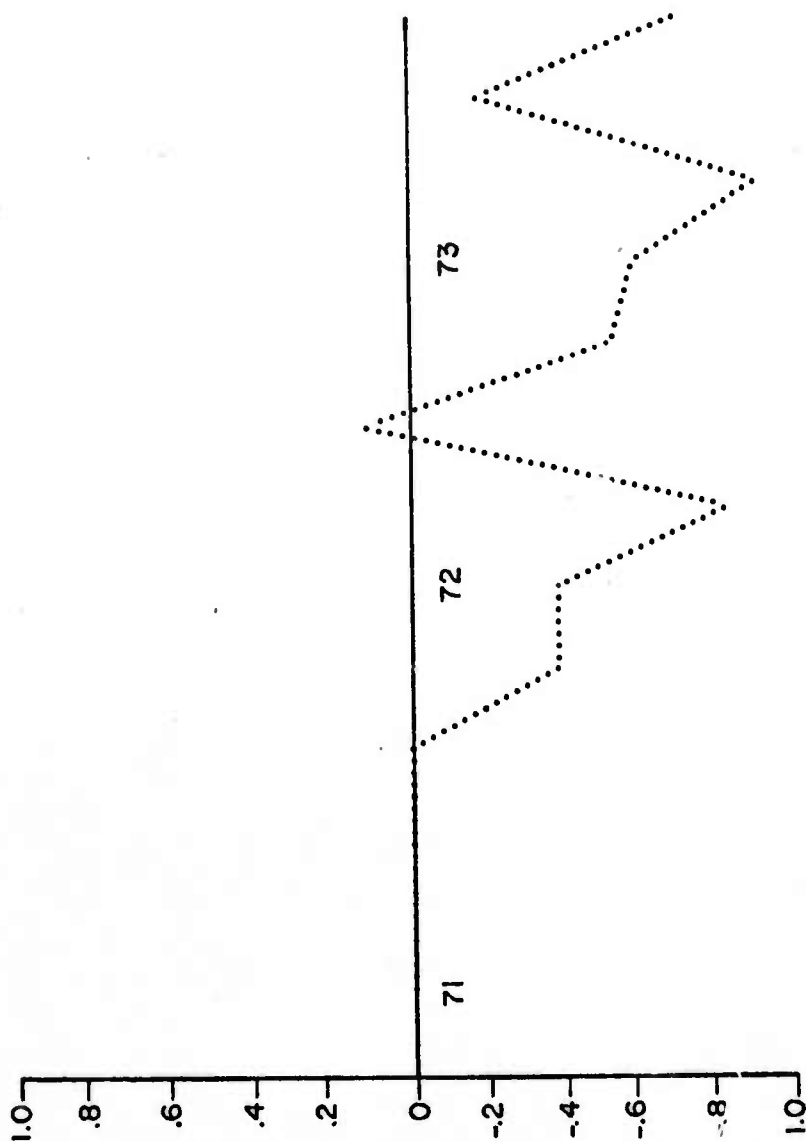
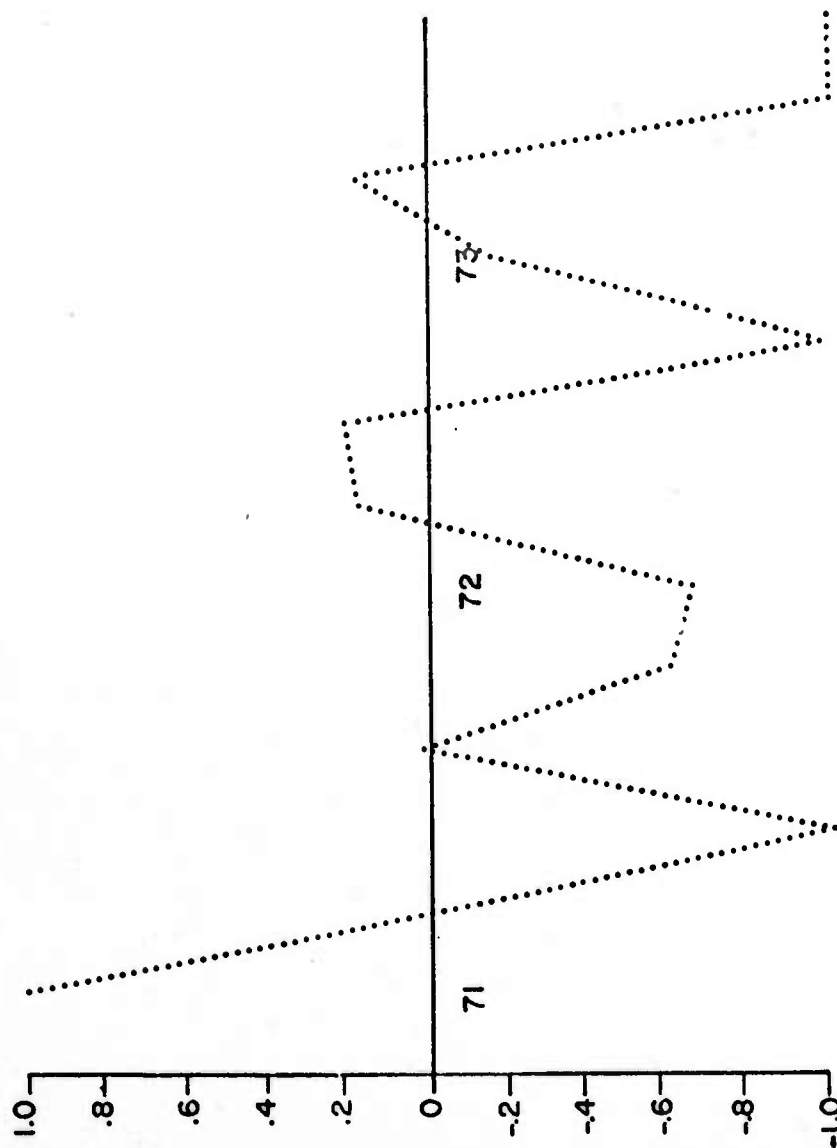


FIGURE 7. BEHAVIOR STYLE OF LEFTIST OPPOSITION TOWARD THE GOVERNMENT.



**FIGURE 8. BEHAVIOR OF THE CENTRIST OPPOSITION TOWARD THE GOVERNMENT.**

Neither figure suggests a strong trend toward increasing polarization and conflict which might undercut political stability. Thus, according to assumption 2b, it is unlikely that instability resulting from political polarization would, in the near future, prevent Japan from moving beyond the SDF concept or developing a military nuclear capability.

Figure 9, which contains a forecast of a domestic stability indicator, suggests that if current trends continue, there will be a moderate increase in internal instability.<sup>7</sup> This suggestion is not inconsistent with the preceding paragraph. Instability may be due to economic concerns and an increasing dissatisfaction with the quality of life, rather than to political polarization at the national level. While the forecast does not predict an immediate and rapid increase in instability, the trend could, if unchecked, decrease the chances for an expansion of Japanese military forces (assumption 2b).

#### Japan's International Economic Activity

We have assumed that increasing trade with nations in the Asian area and foreign investment in the world would create pressures to expand the SDF beyond its present size in order to protect Japan's economic interests. Figure 10 shows Japan's export growth in the world as a whole and in Asia specifically, and contrasts these trends to the growth of U.S. exports to the world. The figure illustrates that Japanese trade has been increasing dramatically. While increased costs of production will probably slow this growth, the prospects for expanding trade in Asia are good. Figure 11 shows that Japan's foreign investment of private capital is also increasing.

According to assumption 1c, it is likely that increasing foreign trade in the Asian areas and foreign investment will enhance Japan's desire to move beyond the SDF concept. However, assumption 3a suggests that this

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<sup>7</sup> The forecasting method, exponential smoothing, is discussed in footnote 3.

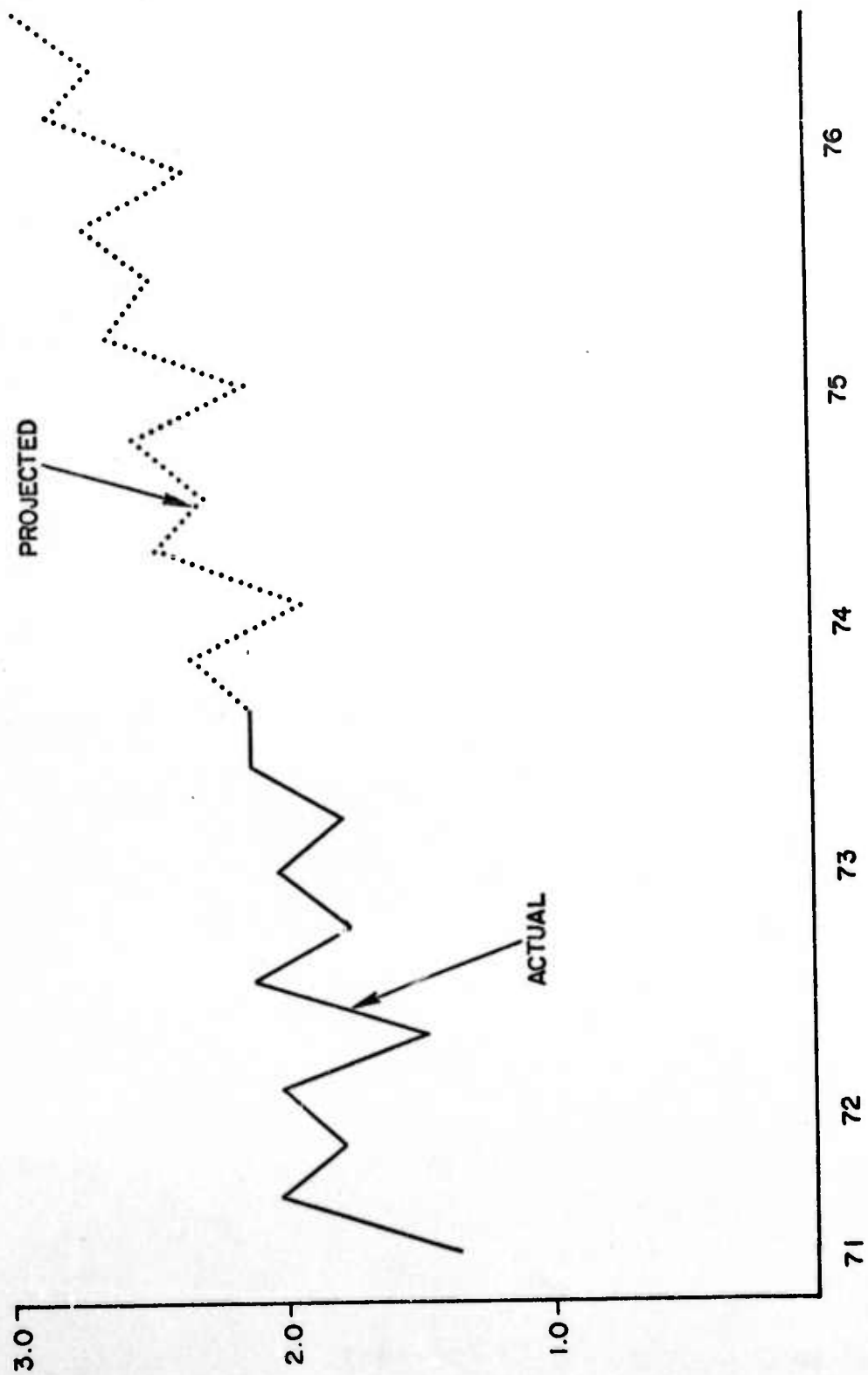


FIGURE 9. FORECAST OF INDEX OF DOMESTIC INSTABILITY.

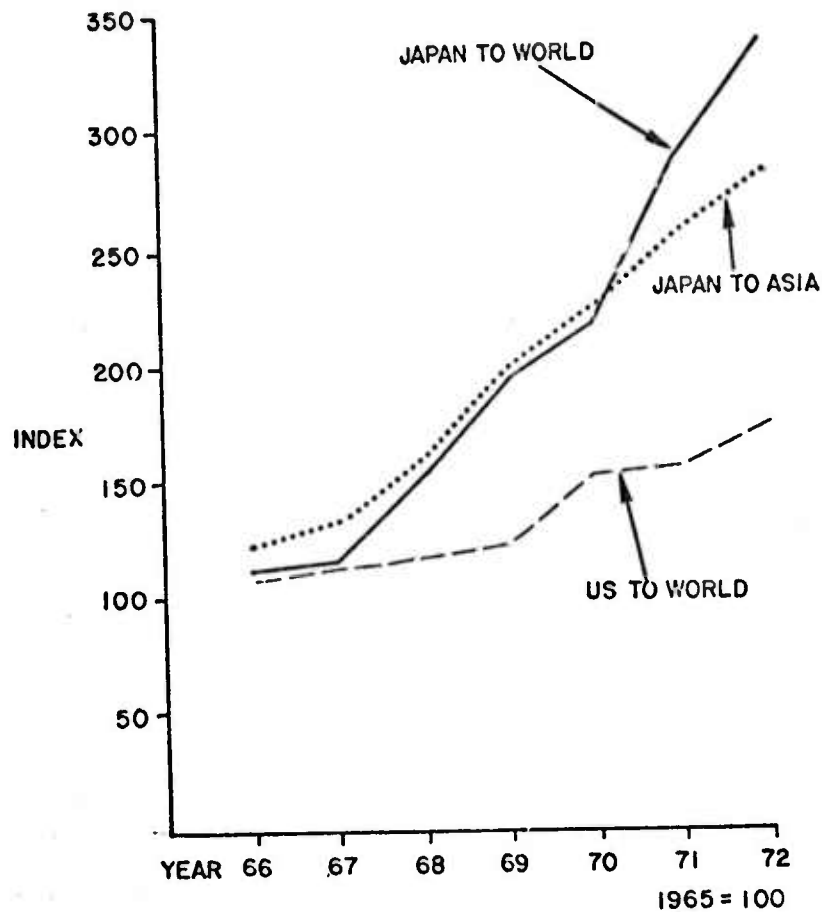


FIGURE 10. JAPAN'S EXPORT GROWTH.

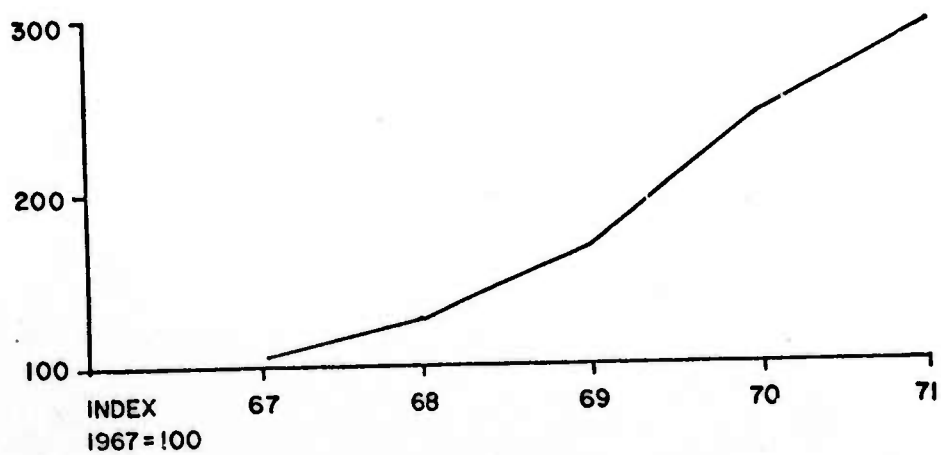


FIGURE 11. PRIVATE OVERSEAS CAPITAL INVESTMENT.

desire will be tempered by the fact that Japan will not want to risk the improved relations with China and the Soviet Union.

### CONCLUSIONS

The major conclusions reached from using the indicators in conjunction with the assumptions are as follows:

1. The likelihood of Japan's expanding its conventional military force beyond the SDF concept in the near future is very low.

Reasons: No projected foreign threat from the Soviet Union or China is adequate to produce expansions of conventional military sources; projections of increasingly favorable public perceptions of the Soviet Union and China weigh against expansion; any inclination toward expansion due to increasing foreign trade and investment is offset by a desire not to upset relations with the Soviet Union and China which are forecast to remain improved; opposition parties are more opposed to expansion than is the current Government--thus, an increase in opposition power would not make expansion more likely.

2. There is more than a slight possibility for abrogation of the Mutual Security Treaty in the near future, but abrogation is well short of a certainty.

Reasons: Increasingly favorable public perceptions of the Soviet Union and China could lead to popular support for abrogation; an increase in opposition party strength would favor abrogation; projected moderate downturns in relations with the Soviet Union and China would not enhance the likelihood of abrogation.

3. Acquisition of a military nuclear capability in the near future is highly unlikely.

Reasons: No projected foreign threat from the Soviet Union or China is adequate to produce a choice for acquisition; if current trends continue, increasingly favorable public attitudes toward the Soviet Union and China make acquisition less likely; increasing power for the opposition parties would make acquisition even less likely.

C.A.C.I.

IIB

WASHINGTON, D.C. OFFICES

A TREND METHOD FOR  
FORECASTING POLICY STYLE

Michael Maxfield

James Moore

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## SUMMARY AND CONCLUSIONS

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The basic responsibility of the intelligence process is to predict the future. The policy-maker wants to know when any important future event is to happen and to be warned in time to take any necessary decisions and/or actions. He wants to know the timing of events with precision and to assess the immediate impact of an event and the trend expected from this and other future actions.

The intelligence officer's ability to respond to these requirements with desired effectiveness is restricted by several obstacles:

- The frequent lack of timely, accurate, and relevant information.
- The problem of determining, before the fact, which events may occur and which are critical.
- An inability to sense counter-currents (or at least their strength) which can result in unpleasant surprises.
- "Irrational" acts by countries and groups within countries that are unable to cope with (or are unable to find an answer to) an intolerable situation even for short periods of time. This runs counter to a major rule of thumb in estimating, namely the belief that people usually act rationally.
- The basic problem of assimilating all available knowledge, developing a working hypothesis (a model) of the situation under study that fits the bulk of information being received, and then discerning the future trends suggested.

CACI is exploring mathematical and statistical approaches to the problem of estimating. In particular, the focus is on the last obstacle discussed above. Quantitative indicators offer an effective means to develop trends out of masses of information. Computations are made using aggregated event data. Although trial projections so far have been restricted to trends, estimates on a more specific basis may be possible. A study has been initiated to apply quantitative indicators to an issue. It is believed that

a country often deals with a specific issue in a way that is not coterminous with its existing general policy position. Statistical projection techniques used to develop estimates of trends have been applied to issues to give somewhat more focused estimates.

This paper presents one statistical approach that CACI is researching. It is based on the belief that patterns in relations between countries repeat themselves and, thus, can become a basis for estimating. It is also hypothesized that the actual pattern--the slope of the calculated line through time and the variation about the slope--and not the particular activities is the key to estimation. This hypothesis has been tentatively tested empirically using quantitative indicators based on events reported in the New York Times from 1966-1972.<sup>1</sup> Trend lines were established for 81 country-dyads in the data base. They became the basis for delineating between prior patterns and relating these to subsequent changes.

The actual "estimate" is a probabilistic statement. It is presented in a format that divides the possible direction of the patterns into zones. Probabilities are assigned that the policy style (S) indicator will fall in particular zones. The estimate gives the probable amount and direction of change.

#### SAMPLE ESTIMATES

Figure 1 estimates that while Soviet actions and statements (events) toward the United States would remain negative for the period 1970-1972, the highest probability (67%) was for a continued improvement at a moderate pace (31% zone). In actuality, the trend in Soviet policy toward the United States during the period did fall within the 31 percent zone. The trend line in Figure 1 represents what we call "level change" and is the only type of pattern at present that will permit us to estimate non-uniform probabilities for the direction of change. The absence of wide swings from the trend line also contributes to our ability to estimate direction with an encouraging degree of accuracy.

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<sup>1</sup>The method was also applied to FBIS data for 1971-1973. This application is discussed in the section "Application of Trend Forecasting to FBIS".

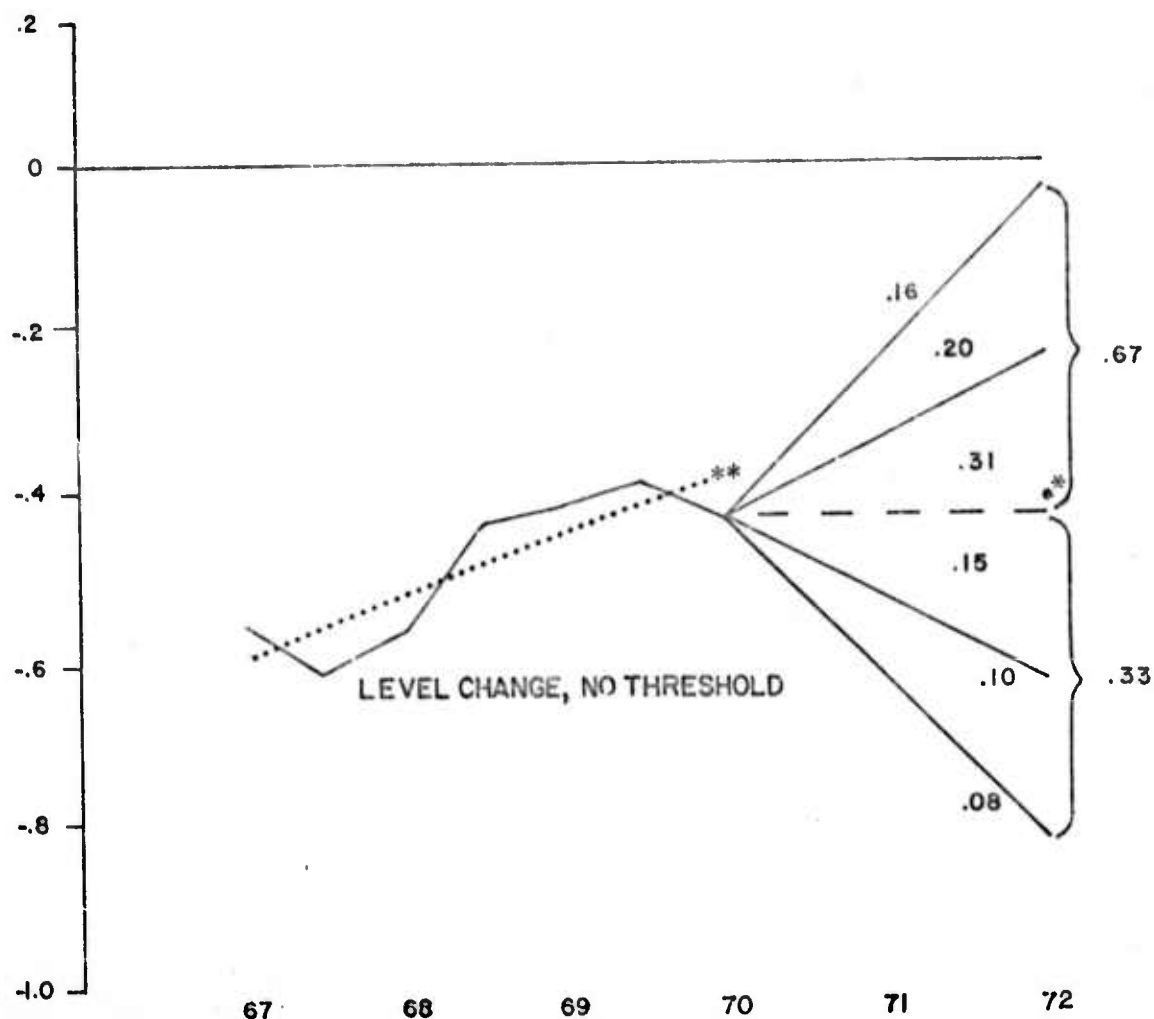


FIGURE 1. POLICY STYLE FOR USSR → US.

Figure 2 also depicts a level-change situation. But this gives an example of one major variety of this category, namely, a steep trend line. Based on the analysis of this category in our 81 cases, there is a high probability that the direction will be reversed within the estimated period.

Figure 3 is an example of a "residual" trend line. On the basis of the historical analysis, it was found that a trend line about which there are wide fluctuations cannot be used as a basis for estimating non-uniform probabilities of direction, although amount of change can be estimated.

Figure 4 is an example of a stable trend line. As with residual patterns, our data indicate that we cannot estimate non-uniform probabilities for direction in such cases; but we can forecast the amount of future change.

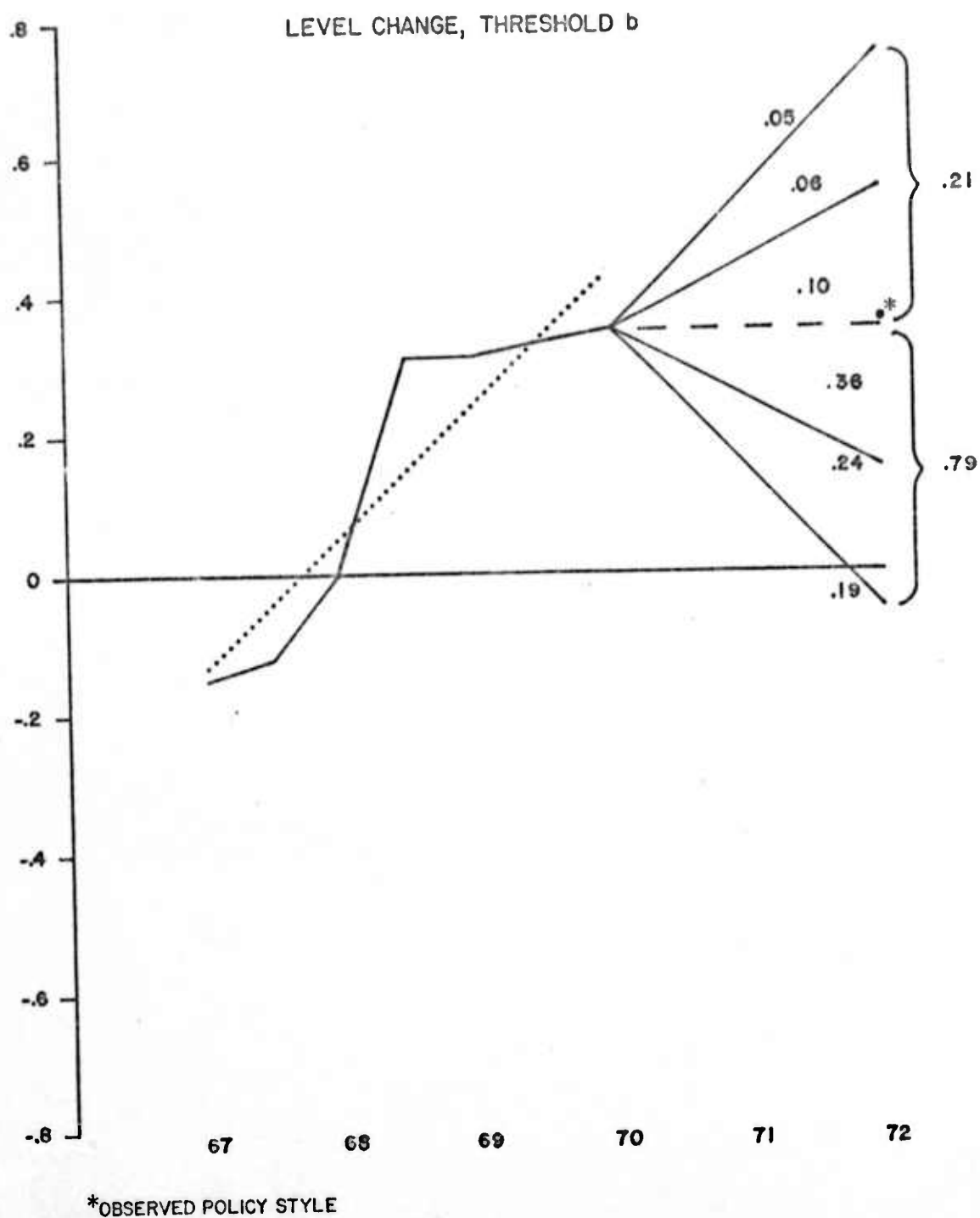


FIGURE 2. POLICY STYLE FOR JORDAN → UAR.

Residual

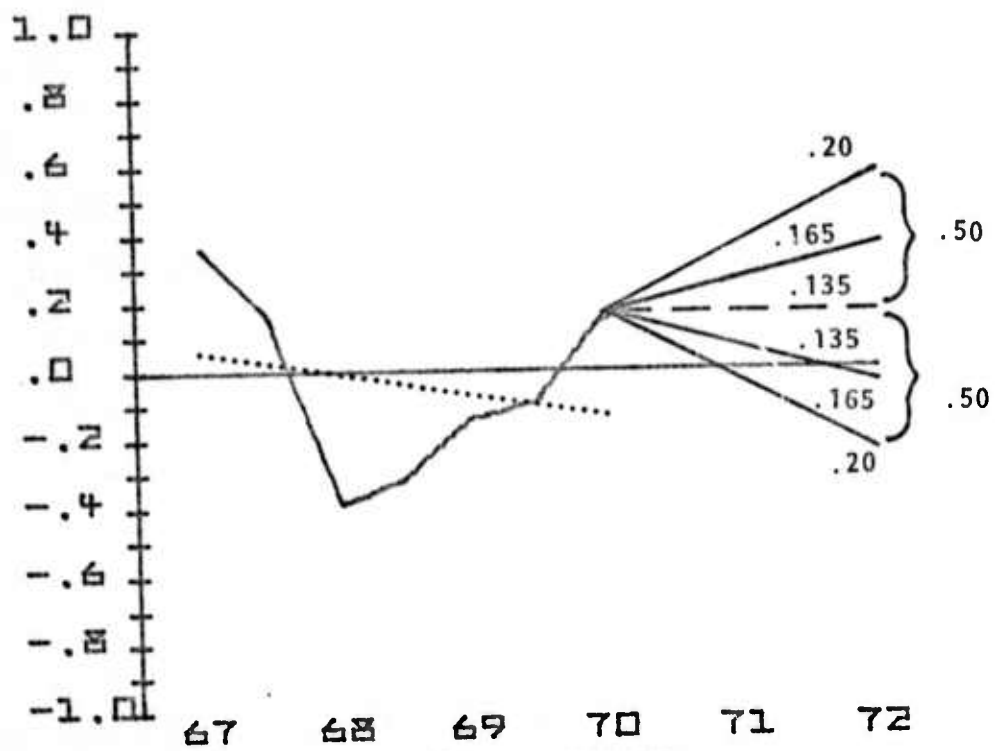


FIGURE 3. POLICY STYLE FOR FRANCE → USSR.

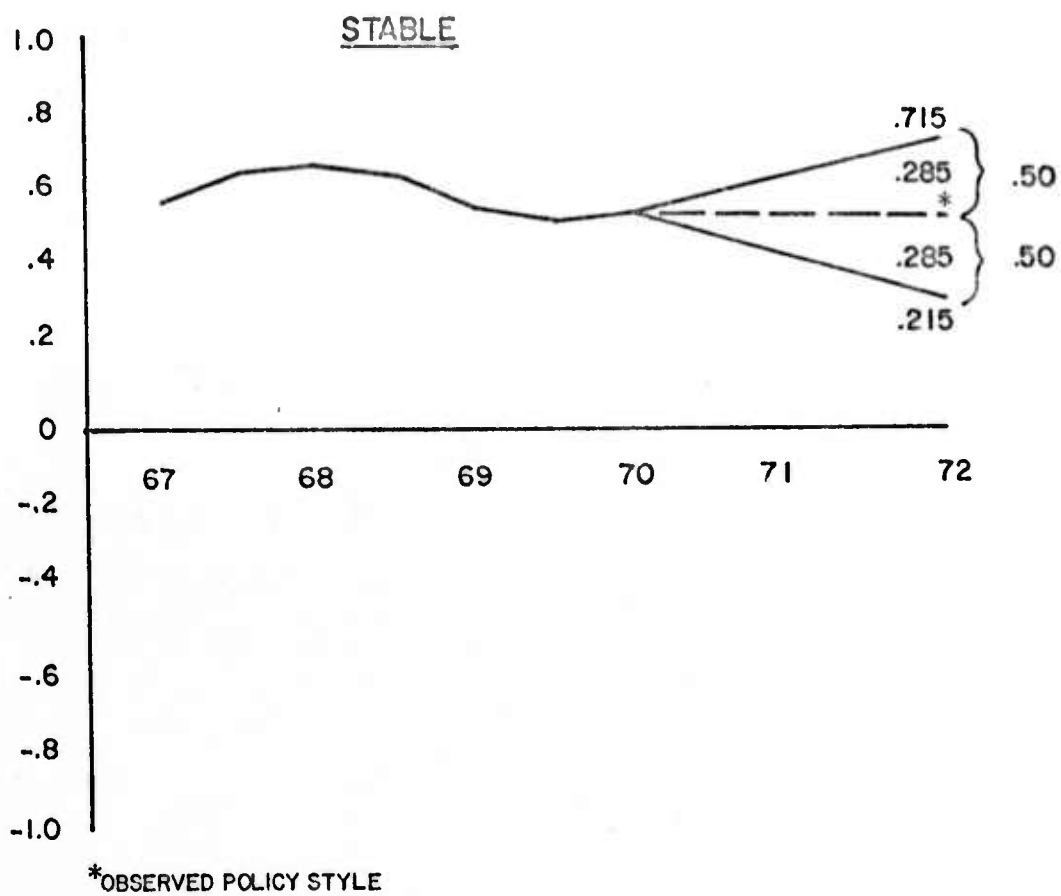


FIGURE 4. POLICY STYLE FOR USSR→ARABS.

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## TECHNICAL DISCUSSION OF TREND FORECASTING

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A previous study (Rubin, 1973b) showed how past values of the relations (R) and policy style (S) indicators could serve as a basis for assigning probabilities that future values of R and S will lie within specified ranges. Historical patterns of policy style, based on seven prior values of S, were classified as (1) stable, showing little fluctuation in S over time; (2) level change, showing a significant difference between the most and least current S values such that S changed considerably in a particular direction; or (3) random, showing discontinuous (small or large) changes in S in no particular direction. These patterns were defined by the average fluctuation of historical values about the current value for S.

Historical patterns were determined using seven values of S from 1967 to 1970 for 81 dyads. The change in S from 1970 to 1972, the period to be predicted, was classified as low, medium, or high. A low change is an absolute change in S of less than .20; a medium change, an absolute change between .20 and .40; and a high change, an absolute change greater than .40. The percentage distribution of change in S across each prior pattern (stable, level change, random) was calculated, resulting in statements of the form: "p" percent of the time, a pattern type "x" is followed by a change of type "y."

Table 1 shows the distribution of change in S by historical patterns. In forecasting policy style for a dyad manifesting level change, for example, one would assign a probability of .84 that S would be between .20 above and .20 below the most recent value for S.

If the absolute amount of change in S can be forecast based on past behavior, the next logical step in further development of this technique is to introduce a capability for making probability statements about the direction of future change. The direction of change could be a useful input to estimating.

TABLE 1  
Distribution of  $\Delta S$  by Historical Patterns

Historical Pattern	Low $ \Delta S  < .20$	Medium $.20 \leq  \Delta S  \leq .40$	High $.40 <  \Delta S $	Total
Stable Group	.69	.19	.12	1.00
Level-Change Group	.84	.05	.11	1.00
Randomly Fluctuating Group	.35	.25	.40	1.00
Total S Sample	.56	.19	.25	1.00

Source: Rubin (1973b)

Using the general concepts discussed above, the present analysis describes a similar means by which the historical direction of behavior can be used to produce probabilistic estimates of the future direction and amount of change.

#### THE METHOD

Independent variables express (a) the general direction of past behavior, and (b) the average fluctuation of historical S values. One of the most succinct expressions of the direction of a relationship is the slope as defined in a linear regression equation:  $S = a + bT$ . Where S corresponds to the seven<sup>2</sup> historical values of S and T is time, b is the slope of S on T and may be interpreted as the average change in style for each unit change in time.<sup>3</sup>

<sup>2</sup> Seven prior periods are the maximum number available in the WEIS data base for forecasting four periods into the future.

<sup>3</sup> The term "a" refers to the value of S when  $T = 0$  and is not relevant to this discussion.

For example, a slope of  $-.45$  means that for a unit change in time,  $S$  can be expected to decline by a value of  $.45$ . The term " $b$ " then is an indicator of the general change in direction of  $S$ .

As an indicator of fluctuation of historical  $S$ , the earlier study measured the average deviation of the six past values about the current  $S$  value. The average deviation of the observed path of historical values from the path predicted by  $b$ , as measured by the standard error of  $b$  ( $\sigma_b$ ), is used in the present study. There are two reasons for this selection: (1)  $\sigma_b$  is an expression of the accuracy of  $b$  in describing the historical  $S$  values; and (2)  $\sigma_b$  is a more familiar and concise statement of the concept of average deviation than the earlier measure. A larger value for standard error of  $b$  indicates greater deviation from the line defined by the regression equation and implies that the direction of change is less constant. That is, a large  $\sigma_b$  may indicate several changes in direction over the historical values of  $S$ , signifying that  $b$  is not a reliable descriptor of the trend of  $S$  values.

In the present study the policy style indicator ( $S$ ) is used. This choice is based on the assumption that the historical change in direction of behavior is best represented by a one-way measure of behavior. Eighty-one dyads are used in this study. The change in  $S$  ( $\Delta S$ ) from the end of 1970 to the end of 1972 for each dyad is used as the dependent variable (i.e., the value to be "predicted") and categorized as previously:

low	$ \Delta S  < .20$
medium	$.20 \leq  \Delta S  \leq .40$
high	$.40 <  \Delta S $

The conceptual categories of historical  $S$  patterns--the predictors--are virtually identical to those used in the previous effort, though the random group is renamed "residual" since the data show that behavior in this category may vary widely but not necessarily randomly. Conceptual definitions

of the three historical types and operational definitions in terms of  $b$  and  $\sigma_b$  are given below:

Stable

$$|b| < .25$$
$$\sigma_b < .125$$

Little variation appears in  $S$  between the beginning and the end of the historical period. Stable cases have relatively small slopes and show little variation about the slope. (See example in Figure 5.)

Level

$$|b| \geq .25$$
$$|b| \geq \sigma_b$$

Change is in a dominant direction. Level-change cases have moderate to high slopes and low values for  $\sigma_b$ , relative to the value of  $b$ . A slope equal to or greater than  $\sigma_b$  is an acceptable criterion of significance for  $b$  (Ezekiel and Fox, 1959: Chapter 5). (See Figures 6 and 7.)

Residual

$$\sigma_b \geq .125$$
$$|b| < \sigma_b$$

Generally, large changes in  $S$  appear but without continuity or dominant direction. Residual cases have larger values of  $\sigma_b$ ;  $b$  may be large but is less than  $\sigma_b$  and therefore, as defined, does not show significant change in one direction. (See Figure 8.)

Since, by definition, stable and residual historical cases do not show change in any distinct direction, non-uniform probability distributions of the direction of future change are not constructed. Only level-change

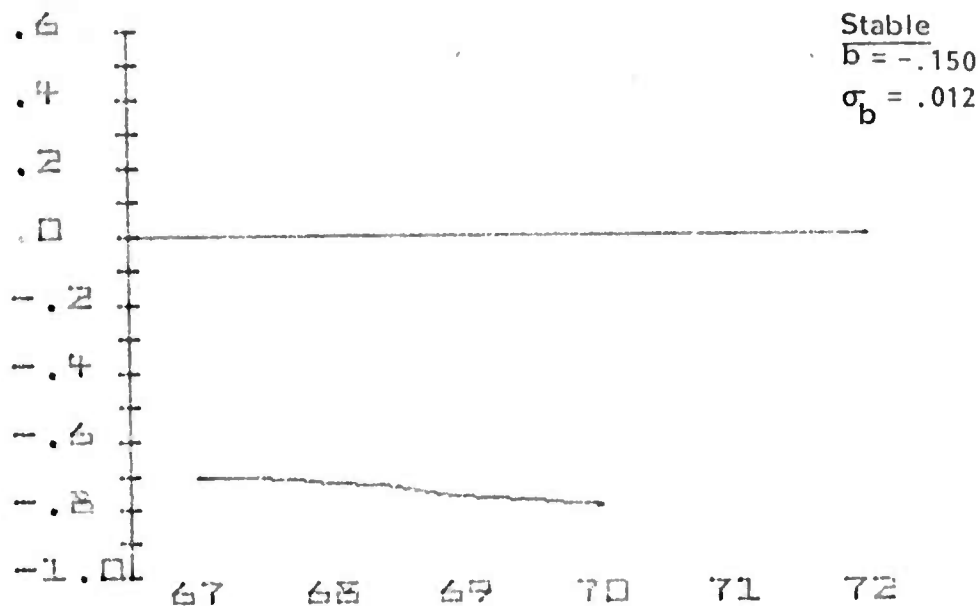
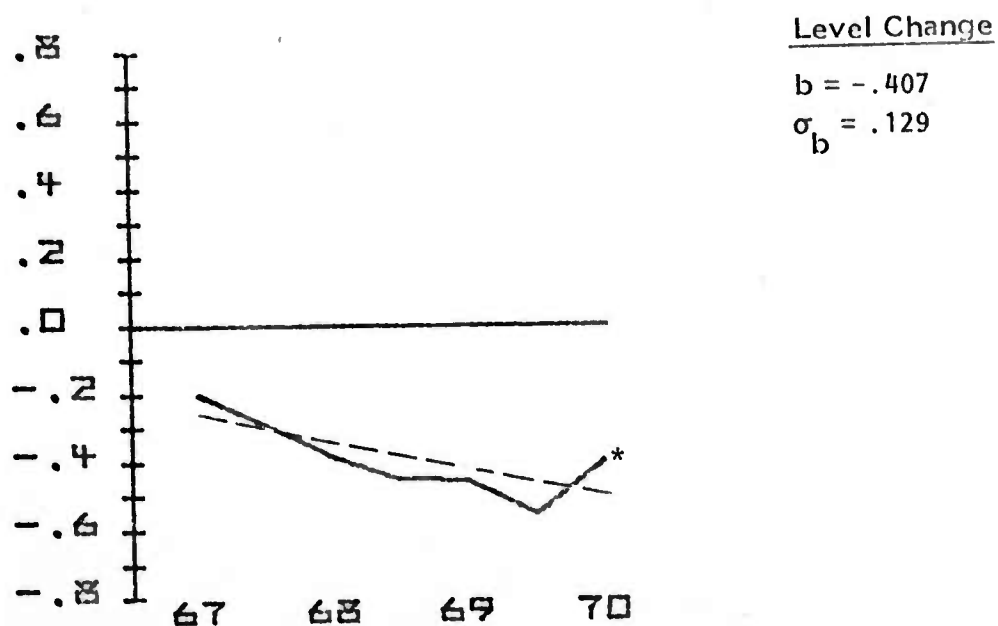
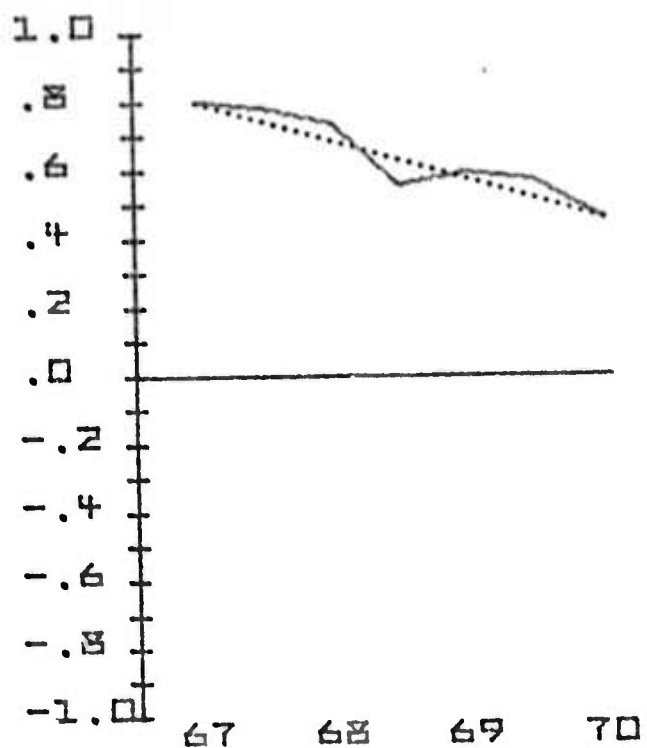


FIGURE 5. POLICY STYLE FOR N. VIETNAM → S. VIETNAM.



\* Though the final point in this figure appears to be a marked deviation from the preceding trend, it can be seen from the values of  $b$  &  $\sigma_b$  that this dyad is classified as a level-change case. If this point were located nearer the trend line, the absolute value of  $b$  would increase and the value of  $\sigma_b$  would decrease.

FIGURE 6. POLICY STYLE FOR USSR → UK.

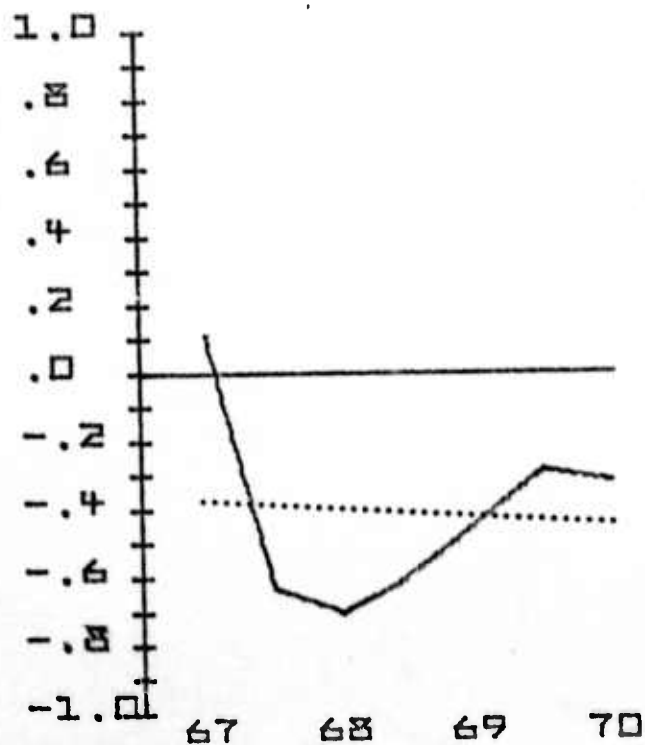


Level Change

$$b = -.568$$

$$\sigma_b = .087$$

FIGURE 7. POLICY STYLE FOR AUSTRALIA → US.



Residual

$$b = -.114$$

$$\sigma_b = .528$$

FIGURE 8. POLICY STYLE FOR INDIA → PAKISTAN.

cases convey sufficient information about past behavior to permit non-uniform probabilities of directional change.

As in the earlier study, probabilities of the magnitude of future change were found by distributing  $\Delta S$  (1970-72) by the historical S categories (stable, level, residual) which were based on 1967-70 S values. This distribution is given in Table 2. The table shows that stable cases are least likely to exhibit change in style. Level-change cases are associated with greater change in future S values; 44 percent of these cases show medium or high  $\Delta S$ . Residual cases are most likely to show large shifts in style; only 27 percent in the residual category are associated with low  $\Delta S$ .

TABLE 2  
Distribution of  $\Delta S$  by Historical Patterns Using  $b$  and  $\sigma_b$

Historical Pattern (1967-1970)	$\Delta S$ (1970-1972)			Total
	Low $ \Delta S  < .20$	Medium $.20 \leq  \Delta S  \leq .40$	High $.40 <  \Delta S $	
Stable $b < .25$ $\sigma_b < .125$	.73 (11)	0.0 (0)	.27 (4)	1.00 (15)
Level $b \geq .25$ $b \geq \sigma_b$	.57 (29)	.22 (11)	.22 (11)	1.01 (51)
Residual $\sigma_b \geq .125$ $b < \sigma_b$	.27 (4)	.33 (5)	.40 (6)	1.00 (15)
TOTAL	.54 (44)	.20 (16)	.26 (21)	1.00 (81)

The 51 level-change cases are those for which directional probability distributions were subsequently formed. Preliminary analysis indicated that the direction of  $\Delta S$  seemed only slightly related to the direction of  $b$ . In fact, a greater proportion of  $\Delta S$  values tended to be in the opposite direction of  $b$ , that is, most of the 1970-72 observations changed from the 1970  $S$  in the direction opposite the prior slope of  $b$ . Examination of all level-change cases revealed two reasons for such counter-intuitive results. Where the current value of  $S$  ( $S$  for the 24-month period ending 31 December 70; hereafter " $S_c$ ") was greater than  $+0.60$  or less than  $-0.80$ ,  $\Delta S$  tended to be in the opposite direction of  $b$ . Those cases with extreme values of  $S_c$  were more subject to constraints in possible future  $S$  values because of their proximity to the numerical limits of the  $S$  indicator. For this reason it can be expected that level-change dyads with extreme  $S_c$  will tend to exhibit future change in the opposite direction of past behavior since continued movement in the same direction as  $b$  is restricted.

Further idiosyncratic behavior of these "threshold"  $S_c$  cases was identified. The amount of change in a very high proportion of  $\Delta S$  values for these cases was less than  $\pm 0.20$  regardless of pattern type. This finding is intuitively plausible since it seems reasonable to expect that cases with strongly positive or negative style will be less likely to show large changes in future  $S$  values. That is, if we can accept  $S$  as a measure of the intensity of one-way dyadic behavior, then we can expect that those dyads in which intensity is highest will be less likely to manifest a large change in  $S$ . Separate distributions for amount of change were derived for these threshold and non-threshold  $S_c$  cases in order to discriminate between the different types of behavior associated with the two sets of cases. These distributions are presented in Tables 3 and 4. It can be seen from these tables that the distribution of  $\Delta S$  across historical patterns with non-threshold  $S_c$  values is dramatically different from the distribution across threshold  $S_c$  cases. Eighty-six percent of all threshold  $S$  patterns are associated with low  $\Delta S$ , while only 42 percent of non-threshold  $S$  patterns show low  $\Delta S$ . There are no residual patterns in the threshold  $S$  distribution.

TABLE 3  
Probability of Amount of Change for Non-Threshold  $S_c$   
(where  $-.80 < S_c < +.60$ )

Historical Pattern	$\Delta S$ (1970-1972)			
	Low $ \Delta S  < .20$	Medium $.20 \leq  \Delta S  \leq .40$	High $.40 <  \Delta S $	Total
Stable	.57 (4)	0.0 (0)	.43 (3)	1.00 (7)
Level	.46 (17)	.30 (11)	.24 (9)	1.00 (37)
Residual	.27 (4)	.33 (5)	.40 (6)	1.00 (15)
TOTAL	.42 (25)	.27 (16)	.31 (18)	1.00 (59)

TABLE 4  
Probability of Amount of Change for Threshold  $S_c$   
(where  $+.60 \leq S_c$  or  $S_c \leq -.80$ )

Historical Pattern	$\Delta S$ (1970-1972)			
	Low $ \Delta S  < .20$	Medium $.20 \leq  \Delta S  \leq .40$	High $.40 <  \Delta S $	Total
Stable	.88 (7)	0.0 (0)	.12 (1)	1.00 (8)
Level	.86 (12)	0.0 (0)	.14 (2)	1.00 (14)
TOTAL	.86 (19)	0.0 (0)	.14 (22)	1.00 (22)

The second factor contributing to opposite directional behavior affects cases with non-threshold S values. It was found that dyads with very high slopes tended to reverse direction. The mean slope of these cases where  $\Delta S$  was in the opposite direction of b was 1.018 while the mean slope of those where  $\Delta S$  and b were in the same direction was .727. Although tests of significance may not be appropriate for two such non-independent samples, a difference of means test shows significance at the .025 level. This finding is interpreted as an example of the well documented social science phenomenon of the regression effect whereby extreme individuals tend to move toward the mean or less extreme range of values over time (Campbell and Stanley, 1963: 10-12; Rummel, 1970: 235-236). A familiar example is the common observation that very tall parents tend to have shorter children, and that very short parents tend to have taller children. The cutoff point above which cases were classified as having a threshold b value was established at  $\pm .90$ . Cases where  $|b| < .90$  were classified as having non-threshold b.

Directional probability distributions for the three level-change types (threshold  $S_c$ , threshold b, non-threshold) are given in Tables 5a-5c. Figure 9 shows a level-change case with a threshold  $S_c$  value while Figure 10 presents an example of a threshold slope.

The classification of historical behavior for predicting the amount and direction of change therefore depends on three values: historical b and  $\sigma_b$ , and current S. General procedures for computing probabilities and selected examples are given below:

A. Finding probabilities of amount of future change:

If  $-.80 < S_c < +.60$

use Table 3

If  $-.80 \geq S_c$  or  $S_c \geq .60$

use Table 4

TABLE 5a  
Level Change, Threshold  $S_c$

Where  $+.60 \leq S_c$  or  $S_c \leq -.80$   
 Probability of direction of  $\Delta S$  related to direction of  $b$

<u>Same</u>	<u>Opposite</u>
.36	.64
(5)	(9)

TABLE 5b  
Level Change, No Threshold

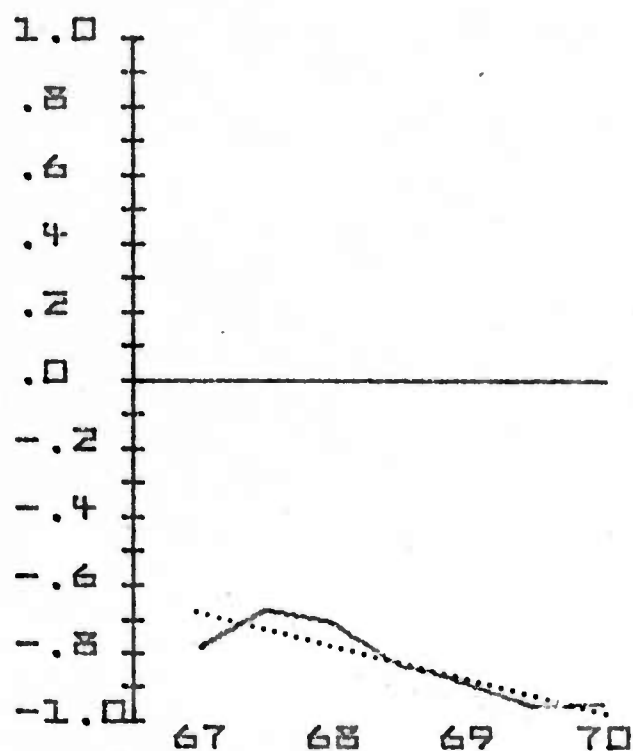
Where  $-.80 < S_c < +.60$  and  $.90 > |b|$   
 Probability of direction of  $\Delta S$  related to direction of  $b$

<u>Same</u>	<u>Opposite</u>
.67	.33
(12)	(6)

TABLE 5c  
Level Change, Threshold  $b$

Where  $-.80 < S_c < +.60$  and  $.90 \leq |b|$   
 Probability of direction of  $\Delta S$  related to direction of  $b$

<u>Same</u>	<u>Opposite</u>
.21	.79
(4)	(15)



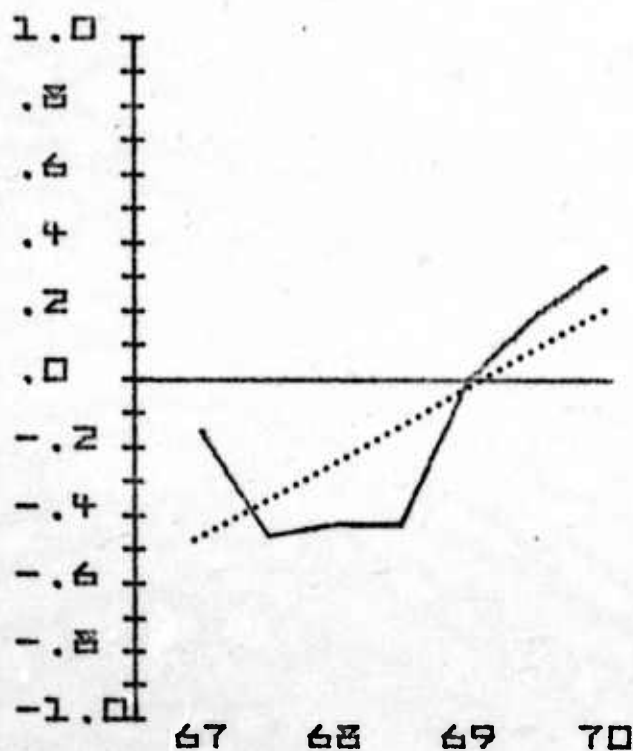
Level Change, Threshold  $S_c$

$$b = -.454$$

$$\sigma_b = .109$$

$$S_c = -.95$$

FIGURE 9. POLICY STYLE FOR ISRAEL → UAR.



Level Change, Threshold  $b$

$$b = 1.13$$

$$\sigma_b = .394$$

FIGURE 10. POLICY STYLE FOR BRAZIL → US.

Example 1:

FRN→USR (see Figure 3)

$$S_c = .16 \text{ (use Table 3)}$$

$$b = -.296$$

$$\sigma_b = .470$$

In this case the absolute value of  $b$  is less than  $\sigma_b$ , signifying that the variation in the path of historical  $S$  values is too great to permit non-uniform estimates of the direction of future change.

$$P(\text{low } \Delta S) = .27$$

$$P(\text{med } \Delta S) = .33$$

$$P(\text{high } \Delta S) = .40$$

Example 2:

ARABS→USR (see Figure 4)

$$S_c = .54$$

$$b = .171$$

$$\sigma_b = .084$$

In this example both  $b$  and  $\sigma_b$  are low, indicating that there has been little change in policy style for this dyad over the historical period.

$$P(\text{low } \Delta S) = .57$$

$$P(\text{med } \Delta S) = 0.00$$

$$P(\text{high } \Delta S) = .43$$

- B. Finding probabilities of amount and direction (for level-change cases only) of future change.

If  $-.80 \geq S_c$  or  $S_c \geq .60$   
 use Table 4 and Table 5a  
 If  $-.80 < S_c < .60$  and  $|b| < .90$   
 use Table 3 and Table 5b  
 If  $-.80 < S_c < .60$  and  $|b| \geq .90$   
 use Table 3 and Table 5c

Example 3:

USR→USA (see Figure 1)

$S_c = -.43$  (use Table 3 for predicting amount of change)

$b = .357$

$\sigma_b = .090$  (use Table 5b for predicting direction of change)

Since the probability of the simultaneous occurrence of two events is equal to the product of the individual probabilities of each event, multiply each probability of amount of change by each probability for change in the same (positive in this case) direction as  $b$  and in the opposite (negative) direction.

Positive Change

$P(\text{low } \Delta S) = (.46) \times (.67) = .31$   
 $P(\text{med } \Delta S) = (.30) \times (.67) = .20$   
 $P(\text{high } \Delta S) = (.24) \times (.67) = .16$   
 $p(\text{positive change}) = .67$

Negative Change

$P(\text{low } \Delta S) = (.46) \times (.33) = .15$   
 $P(\text{med } \Delta S) = (.30) \times (.33) = .10$   
 $P(\text{high } \Delta S) = (.24) \times (.33) = .08$   
 $p(\text{negative change}) = .33$

Example 4:

JOR→UAR (see Figure 2)

$S_c = .35$  (use Table 3 for predicting amount of change)

$b = .968$  (threshold  $b$ ; use Table 5c for predicting direction)

$\sigma_b = .167$

Positive Change

$P(\text{low } \Delta S) = (.46) \times (.21) = .10$

$P(\text{med } \Delta S) = (.30) \times (.21) = .06$

$P(\text{high } \Delta S) = (.24) \times (.21) = .05$

$p(\text{positive change}) = .21$

Negative Change

$P(\text{low } \Delta S) = (.46) \times (.79) = .36$

$P(\text{med } \Delta S) = (.30) \times (.79) = .24$

$P(\text{high } \Delta S) = (.24) \times (.79) = .19$

$p(\text{negative change}) = .79$

Summary

This analysis has shown how an analyst can forecast future values for  $S$  using information on direction and variation in historical  $S$  values. Present capabilities permit 2-year forecasts based on the seven most current 24-month values of  $S$ . Future experiments could permit shorter or longer range forecasts. For example, seven 12-month values of  $S$  with moving 3-month intervals may enable 1-year forecasts to be made. Although additional information may be incorporated for making longer range forecasts, the technique seems valid for longer ranges of prediction given sufficient numbers of prior observations of  $S$ .

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## APPLICATION OF TREND FORECASTING TO FBIS

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In this section we discuss the application of the policy style forecasting technique to event data from the Foreign Broadcast Information Service Bulletin (FBIS) coded under the DECS system. As in the preceding paper, information about historical  $b$  and  $\sigma_b$  is used to assign probabilities that future values of  $S$  will lie within certain ranges. New distributions of the change in  $S$  across historical patterns were formed for 114 cases using FBIS data. These distributions were applied to forecast  $S$  for 42 test cases. The results of these tests indicate that knowledge of historical  $b$ ,  $\sigma_b$ , and current  $S$  can enable the analyst to make valid estimates of future policy style probabilities.

The first section of this paper presented a technique for estimating  $S$  for a WEIS-coded New York Times (NYT) event data base. Two-year forecasts based on the seven most current smoothed values of  $S$  were made.  $S$  was calculated at 6-month intervals for the preceding 24-months. Six years of data were required to apply this method.

With our current 3-year FBIS data base we do not have a sufficient time series to calculate  $S$  for a 2-year forecast. Attempts to apply the existing probability distributions to shorter range  $S$  forecasts yielded forecasts that were not consistent with observed policy style in the forecast period. There are two probable reasons for such results: (1) despite calculation of a smoothed  $S$  value, the behavior of  $S$  over shorter time periods is different from the behavior of  $S$  over longer time periods; (2) differences in source selection (FBIS vs. NYT) and differences in coding conventions (DECS vs. WEIS) account for differential behavior in  $S$  over time. For these reasons, new distributions of  $S$  by historical patterns were formed.

### DEVELOPMENT OF THE FBIS DISTRIBUTIONS

There are some fundamental differences in the manner in which the FBIS and NYT distributions were derived. Since there are comparatively few dyads

recorded in the FBIS that contain enough events to calculate S, the distributions were formed for six dyads by calculating  $\Delta S$  and the historical patterns at multiple time points. That is, in deriving the WEIS distributions,  $\Delta S$  and b and  $\sigma_b$  were found for each of the 81 dyads. In the FBIS analysis we calculated  $\Delta S$  and the historical pattern descriptors for six dyads over 19 time periods each, yielding a total of 114 cases. The time parameters within which the style indicator was calculated were necessarily shorter. S, as used here, measures policy style<sup>4</sup> for the past 16 weeks, calculated with 4-week moving intervals.  $\Delta S$ , the value to be predicted, is the difference between the most current  $S(S_c)$  and S 16 weeks in the future.

The time-series technique by which the probability distributions were found is perhaps best explained by an example. Figure 11 shows a plot of JAPAN→U.S. style over time for the thirteen 4-week time periods in 1971. As discussed above, the seven most current historical values of S were used as evidence in predicting  $\Delta S$ . As shown in Figure 11, these values of S for the first case in this dyad lie within the two vertical lines labeled H1.  $\Delta S$ , for this case, is the point labeled F1. The seven values of S for the second case lie within the lines labeled H2, and  $\Delta S$  for the second case is labeled F2. By moving incrementally forward in this manner for the entire 3-year time series, we were able to derive 19 cases for each of 6 dyads.<sup>5</sup> We were therefore able to form distributions of  $\Delta S$  by historical pattern for a total of 114 cases. These distributions are presented in Tables 6 and 7.

<sup>4</sup> The computation algorithm for S is also different. In the analysis presented in this section, the events previously referred to as "neutral" are included in the positive category. The formula for S is then:

$$S = \frac{P - N}{P + N}$$

where P = "positive" events

N = "negative" events

See Rubin (1973a) for classifications of events in positive, negative, and neutral categories.

<sup>5</sup> The six dyads used in this analysis are:

JAP→CHN	CHN→JAP
JAP→USR	USR→JAP
JAP→USA	USA→JAP

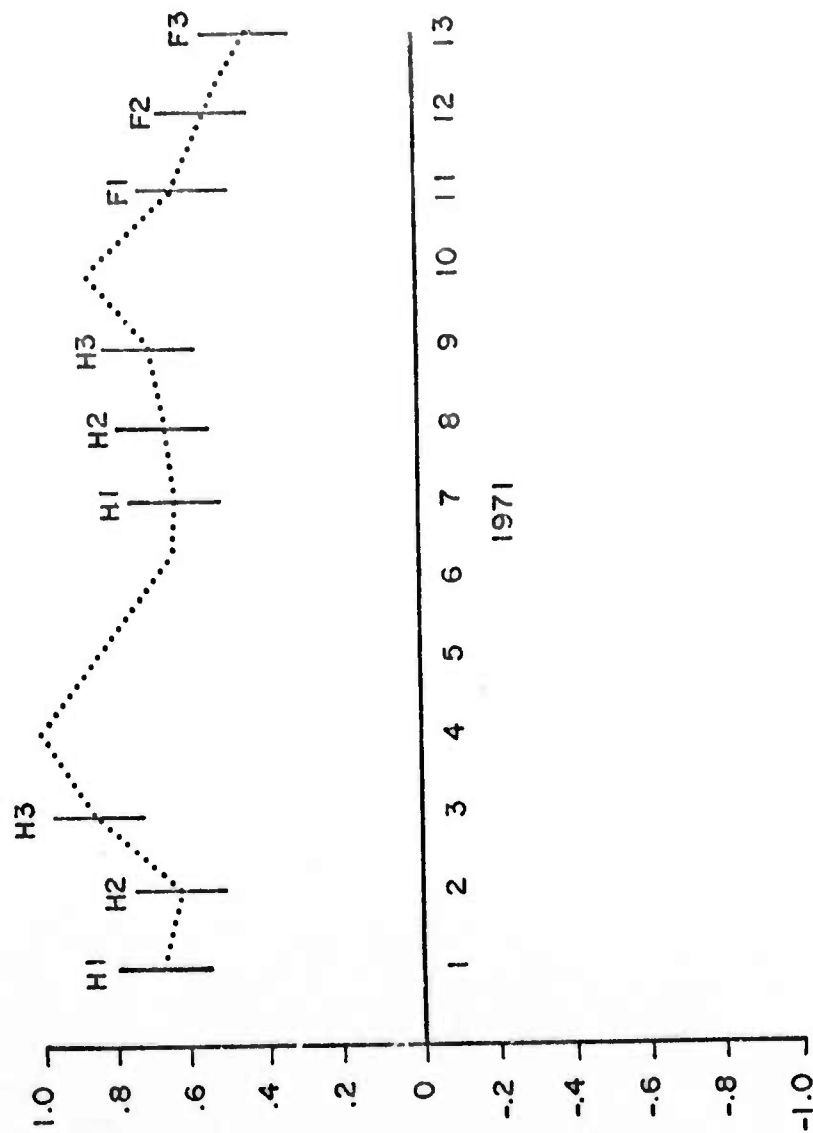


FIGURE II. POLICY STYLE FOR JAPAN → US.

TABLE 6  
Distribution of  $\Delta S$  by Historical  
Pattern for Threshold  $S_c$

Historical Pattern	$\Delta S$			Total
	Low	Medium	High	
Stable	.88 (37)	.12 (5)	0.0 (0)	1.0 (42)
Level	.62 (21)	.23 (8)	.15 (5)	1.0 (34)
Residual	.70 (16)	.26 (6)	.04 (1)	1.0 (23)
TOTAL	.75 (74)	.19 (19)	.33 (6)	(99)

TABLE 7  
Distributions of  $\Delta S$  by Historical  
Pattern for Non-Threshold  $S_c$

Historical Pattern	$\Delta S$			Total
	Low	Medium	High	
Level	.07 (1)	.60 (9)	.33 (5)	1.0 (15)

It can be seen from Tables 6 and 7 that these distributions are quite different from the WEIS distributions presented earlier in this report. The most immediately apparent difference is manifest in the relative frequencies of threshold  $S_c$  cases. Almost 87 percent of all cases are classified as having a threshold value for  $S_c$ , whereas 27 percent of NYT cases have a threshold  $S_c$  value. There are 23 residual cases in the threshold  $S_c$  table, while there were no residual cases with threshold  $S_c$  in the WEIS distribution.

Directional probability distributions for the level-change cases are shown in Table 8.

TABLE 8  
Probabilities of Directional Change  
for Cases with Threshold S  
(level-change cases)

<u>Same (direction as b)</u>	<u>Opposite</u>
.21	.79
(7)	(27)

Probabilities of Directional Change  
for Non-Threshold Cases  
(level-change cases)

<u>Same (direction as b)</u>	<u>Opposite</u>
0.0	1.0
(0)	(15)

There were no level-change cases with a threshold value for  $b$  ( $|b| \geq .90$ ). The most surprising aspect of Table 8 is that all 14 non-threshold level cases were associated with  $\Delta S$  in the opposite direction of  $b$ . Thus we find that short-term trends often tend to reverse themselves regardless of the location of those trends in the policy style space. This contrasts with

findings using longer term trends of WEIS data where the tendency to reverse direction is more outstanding for threshold  $S_c$  cases. Since it hardly seems reasonable to assign probabilities of 1.0 that style will change in one direction and 0.0 that style will change in the other direction, the non-threshold  $S_c$  cases were aggregated with the threshold  $S_c$  cases, resulting in the total directional probability for level-change cases shown in Table 9.

TABLE 9  
Probabilities of Directional Change  
for All Level-Change Cases

<u>Same (direction as b)</u>	<u>Opposite</u>
.14	.86
(7)	(42)

#### TEST OF THE METHOD

The distributions calculated above were used to estimate seven additional points in each of the six dyads. Thus, 42 points which had not been included in the calculation of the prediction distributions were subsequently estimated using those distributions. The estimates were then compared to the actual 42 data points. The actual amounts of change in the 42 cases are shown in Table 10. The table shows, for example, that of the 16 stable cases, 94 percent were followed by low change, 6 percent were followed by medium change, and none were followed by high change.

All of the 42 cases were threshold  $S_c$  cases. Thus, the predicted percentage distribution of change in  $S$  is that given in Table 6. The predicted frequency distributions of change are found by multiplying the actual number of cases in a category (stable, level, residual) by the predicted percentage distribution for that category. Table 11 shows both the actual frequency distribution of the 42 cases and the predicted--or expected--frequencies.

TABLE 10  
Distribution of  $\Delta S$  by Historical  
Pattern for 42 Test Cases  
(Threshold  $S_c$ )

Historical Pattern	$\Delta S$			
	Low	Medium	High	Total
Stable	.94 (15)	.06 (1)	0.0 (0)	1.0 (16)
Level	.83 (15)	.17 (3)	0.0 (0)	1.0 (18)
Residual	.88 (7)	.12 (1)	0.0 (0)	1.0 (8)
TOTAL	.88 (37)	.12 (5)	0.0 (0)	1.0 (42)

TABLE 11  
Expected and Observed Frequency Distribution  
for 42 Test Cases\*

Historical Pattern	$\Delta S$			
	Low	Medium	High	Total
Stable	15 (14.08)	1 (1.92)	0 (0)	(16)
Level	15 (11.16)	3 (4.14)	0 (2.70)	(18)
Residual	7 (5.6)	1 (2.08)	0 (.32)	(8)
TOTAL	(37)	(5)	(0)	(42)

\* Expected frequencies in parentheses

$$r_s = .77$$

In order to evaluate the fit of observed and expected frequencies, a correlation measure is used. Since we are interested in the numerical proximity of observed and actual frequencies rather than merely the similarity of the two distributions, Spearman's rank-order correlation ( $r_s$ ) is used. This coefficient cannot obtain its maximum of 1.0 unless frequencies correspond exactly. Thus,  $r_s$  is a more stringent test in this case than Pearson's  $r$  would be.<sup>6</sup>

As shown in Table 11,  $r_s = .77$ , indicating a good fit between the predicted and actual amounts of change in  $S$ . The actual directions of  $\Delta S$  for the 17 level-change cases in the test group are given in Table 12.

TABLE 12  
Probabilities of Directional Change  
for Cases with Threshold  $S_c$   
(level-change cases)

<u>Same (direction as b)</u>	<u>Opposite</u>
.22	.78
(4)	(14)

It can be readily seen that this distribution is very close to that shown in Table 9, indicating a good fit between actual and estimated directional change in  $S$ .

#### Summary

In this part we have demonstrated how the policy style forecasting technique may be applied to the FBIS data base to produce 16-week probabilistic estimates of  $S$ . Comparison of 42 test cases against the original 114-case probability distribution has shown that this technique produced estimates of the future direction and amounts of change that are quite similar to the

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<sup>6</sup> We wish to thank Dr. Herman Weil for suggesting this technique.

actual distributions. While we cannot infer from these results that future estimates will have equal predictive validity, the results of this test are encouraging.

#### FORECASTS TO APRIL 1974

In this section we present trend forecasts of policy style between Japan and the People's Republic of China, the Soviet Union, and the United States using the method discussed above. Although the period forecast, April 1974, has already past, these estimates are presented and discussed in order to show how the analyst may use this forecasting technique. As we continue to code the FBIS, we will accumulate a longer event-data time series enabling us to form probability distributions for longer range forecasts.

The trend of Japanese policy style toward China from April 1971 through the end of 1973 is shown in Figure 12a. Each data point represents S for the previous 16 weeks. Throughout 1971 there was considerable variation in style from Japan to China. S showed a net decline in 1971 from the maximum value of 1.0 to .50 at the end of the year. This was followed by a sharp increase at the beginning of 1972. Policy style remained stable (above .90) during the first part of 1973; but S began a gradual decline to .70 at the point labeled 7/73.

The seven most recent values of S, from 7/73 through 13/73, are used as evidence in the forecast shown in Figure 12b. Policy style from Japan to China increased steadily from .70 to 1.0 during this period. Since the most current value of S is above .60, we estimate that the change in S by the end of April 1974 will be in the opposite direction of the previous trend. There is a .86 overall probability that S will decline from the present maximum value of 1.0. It is most likely that the change will be low. There is a 53 percent chance that style will fall between .80 and 1.0, and only a 13 percent chance that S will decline below .60. Thus the expectation for the near future is that Japanese policy style toward China will maintain its currently high level, though it is likely that there will be a slight decline in S by April 1974.

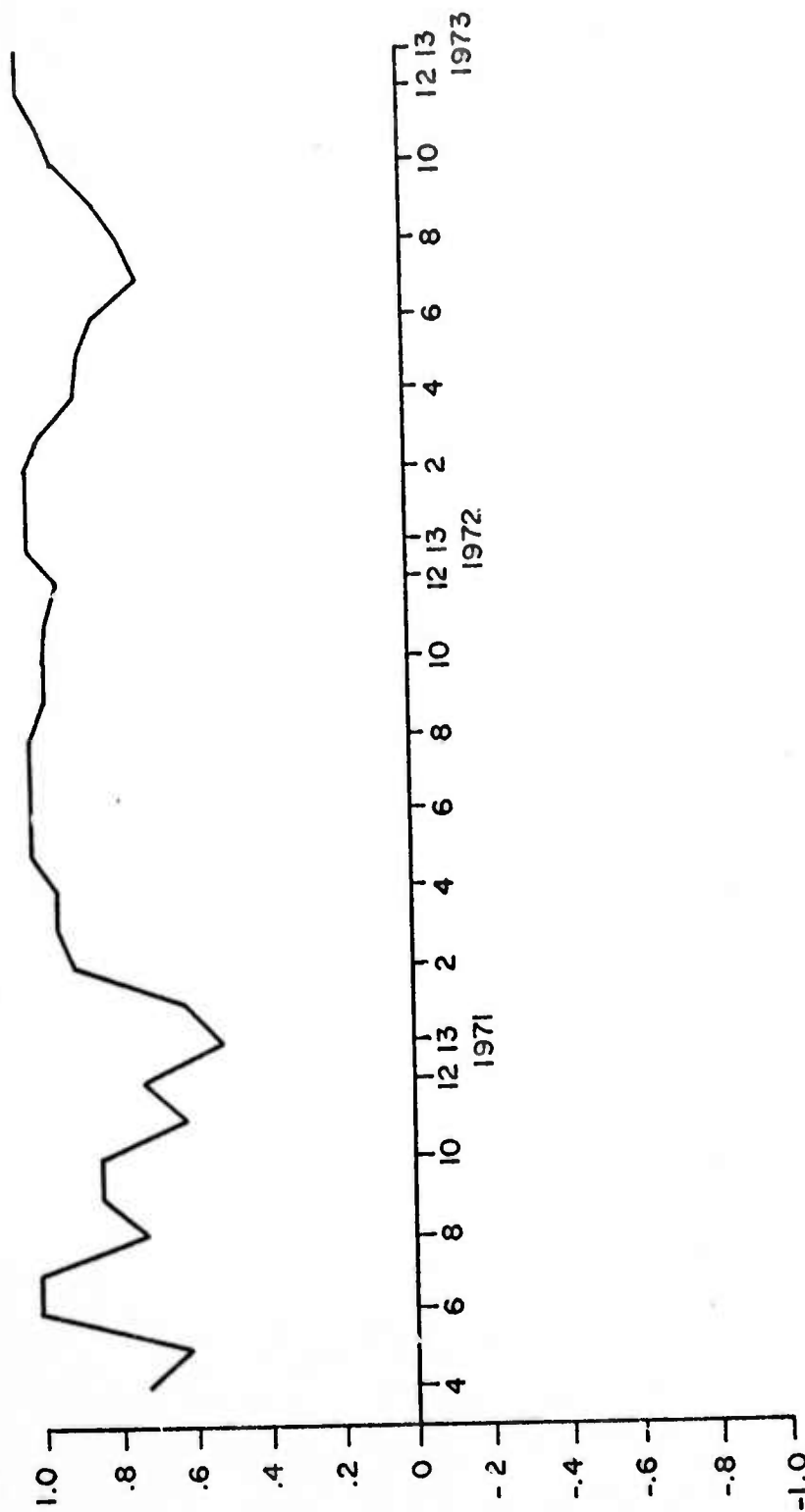


FIGURE 12a. POLICY STYLE FOR JAPAN-PRC.

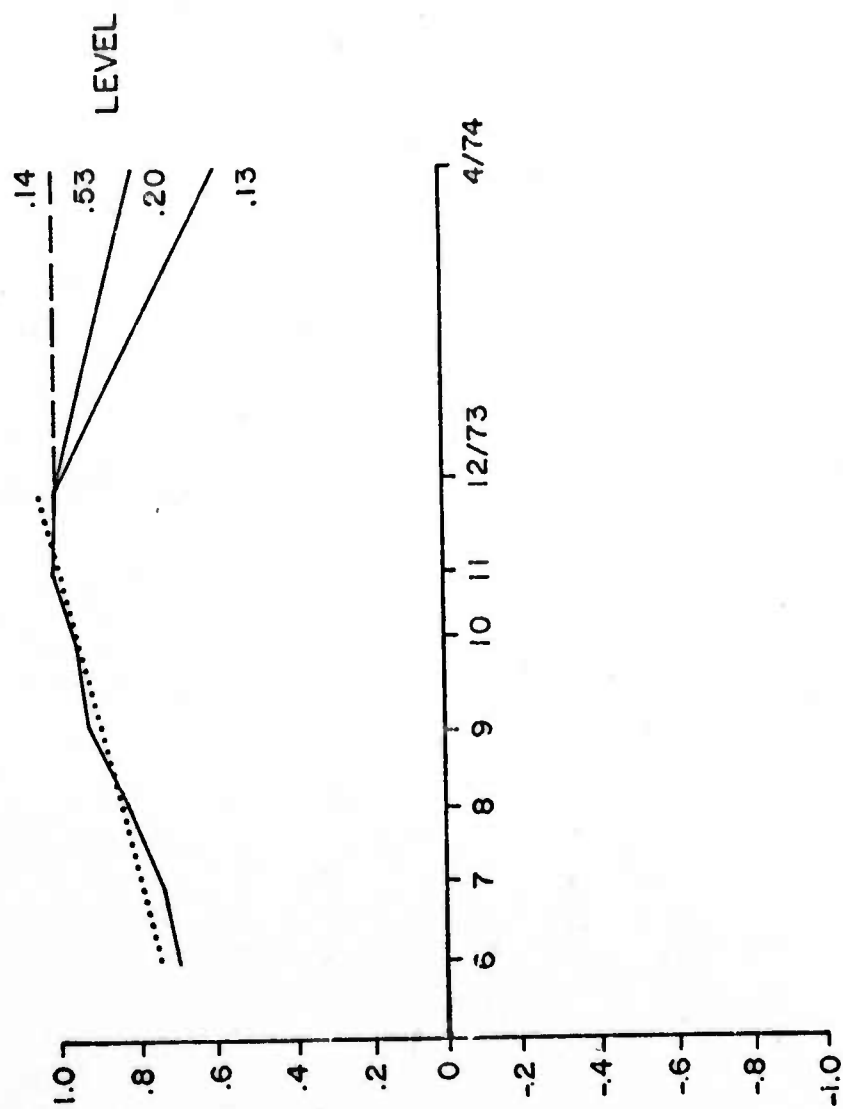


FIGURE 12b. FORECAST OF POLICY STYLE FOR JAPAN—→PRC.

Chinese policy style toward Japan, presented in Figure 13a, exhibits more variation over the past 3 years than the dvad discussed above. In 1971, S varied between a low of .68 and a maximum of 1.0. Style dropped sharply in the beginning of 1972 to a low of .46. After some fluctuation between .50 and .60, Chinese style became increasingly friendly by the end of 1972 and remained above .90 until March 1973. Since April of 1973, S has been relatively steady, between .83 and .93. The seven time periods from 7/73 through 13/73 and the style forecast for April 1974 are shown in Figure 13b. The recent stability in S at a high level is reflected in this forecast. Though there is a 50 percent chance that S will decline from the current value of .83, the probability that S will drop below .63 is only .06. That S will increase is equally likely. There is a 50 percent chance that S will be between .83 and 1.0 by April 1974. The short-term outlook, as of the end of 1973, is that relations between these two countries will continue to be characterized by friendly behavior.

The time series of Japanese policy style toward the Soviet Union is shown in Figure 14a. For the 3-year period, the overall trend is one of generally friendly relations. In 1971 the lowest value of S was .73 in the first part of the year. By the middle of 1971, style reached the maximum of 1.0 and continued at that high level for seven time periods. S exhibited a slight decline in the beginning of 1972 and varied between .80 and .94 throughout the year. In 1973 style dropped to .63, the lowest value for the 3-year period. From the middle of 1973 through the end of the year there was a net increase in S to the current .89.

Figure 14b presents the forecast for Japanese policy style toward the Soviet Union. The seven most current values of S show some variation between .70 and .89, but the recent trend has been relatively stable. Our estimate predicts that style will remain in this friendly range. There is a 50-50 chance that S will increase to 1.0 or decline below .89. The probability that style will fall between .89 and .69 is .44, while there is only a 6 percent chance that S will decline below .69.

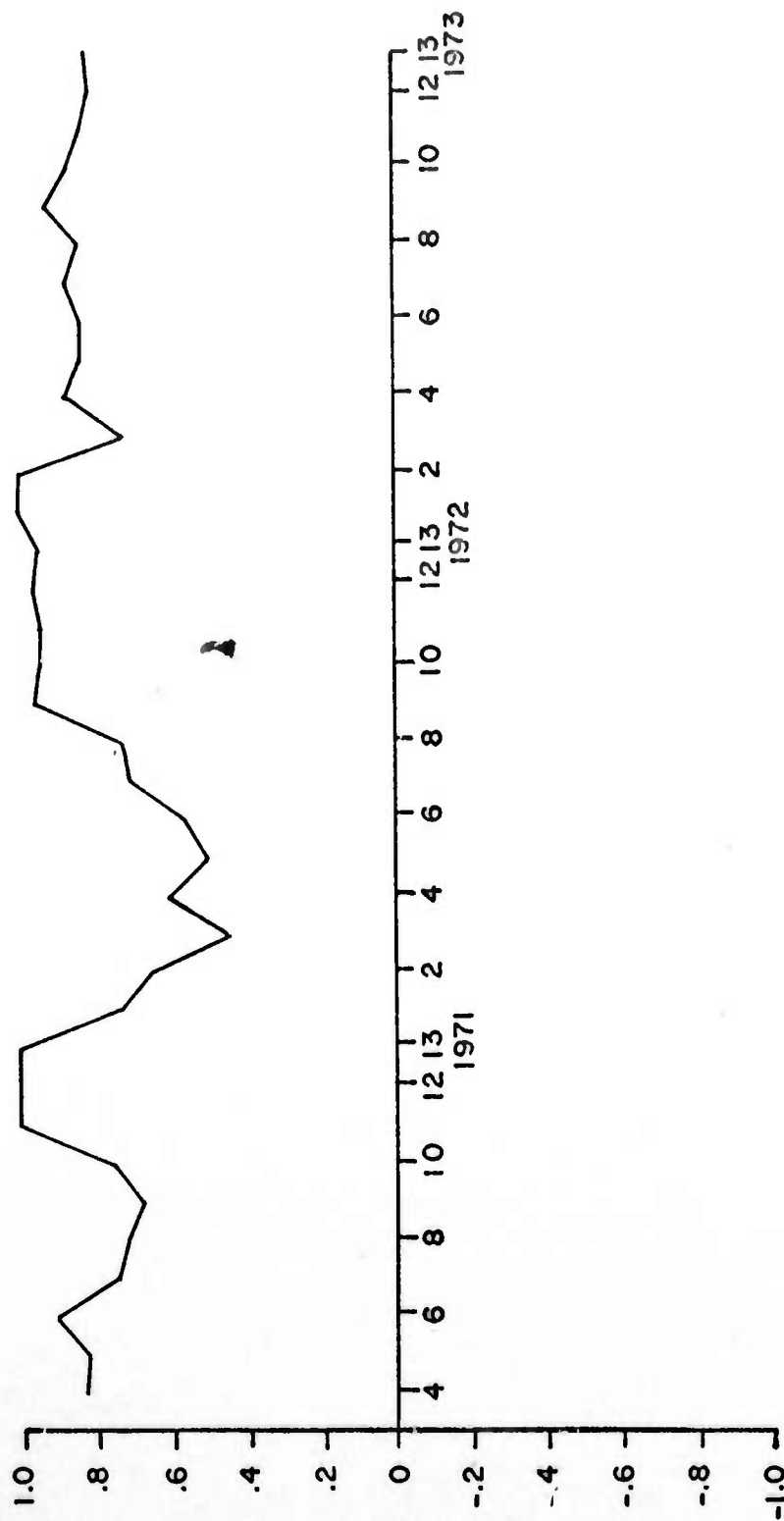


FIGURE 13a. POLICY STYLE FOR PRC—JAPAN.

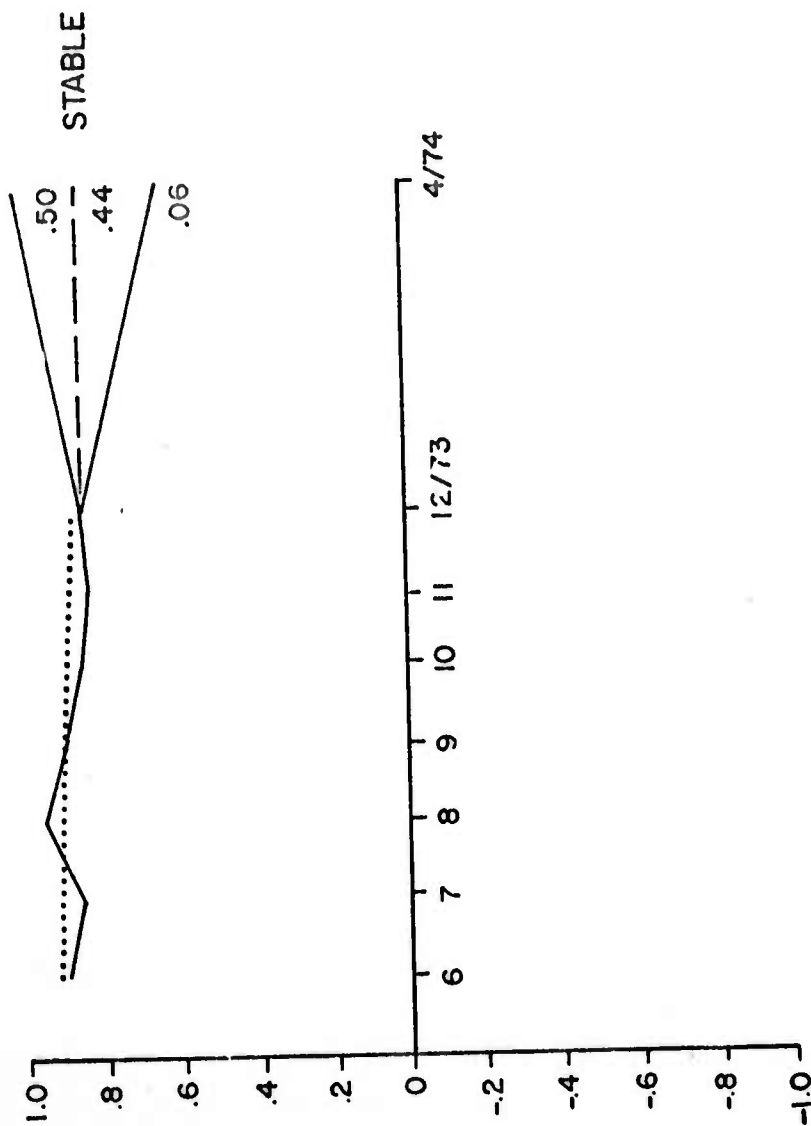


FIGURE 13b. FORECAST OF POLICY STYLE FOR PRC-JAPAN.

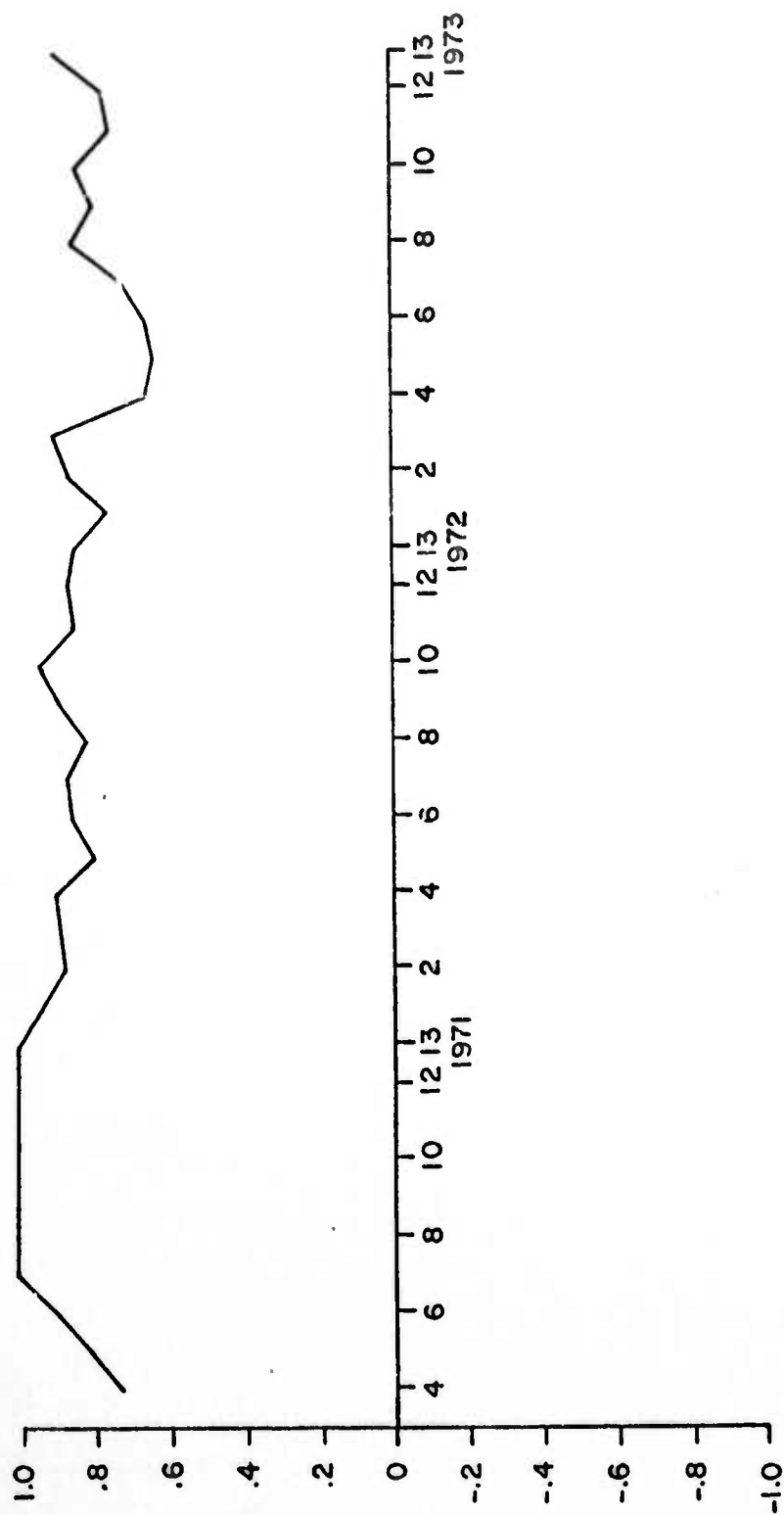


FIGURE 140. POLICY STYLE FOR JAPAN—USSR.

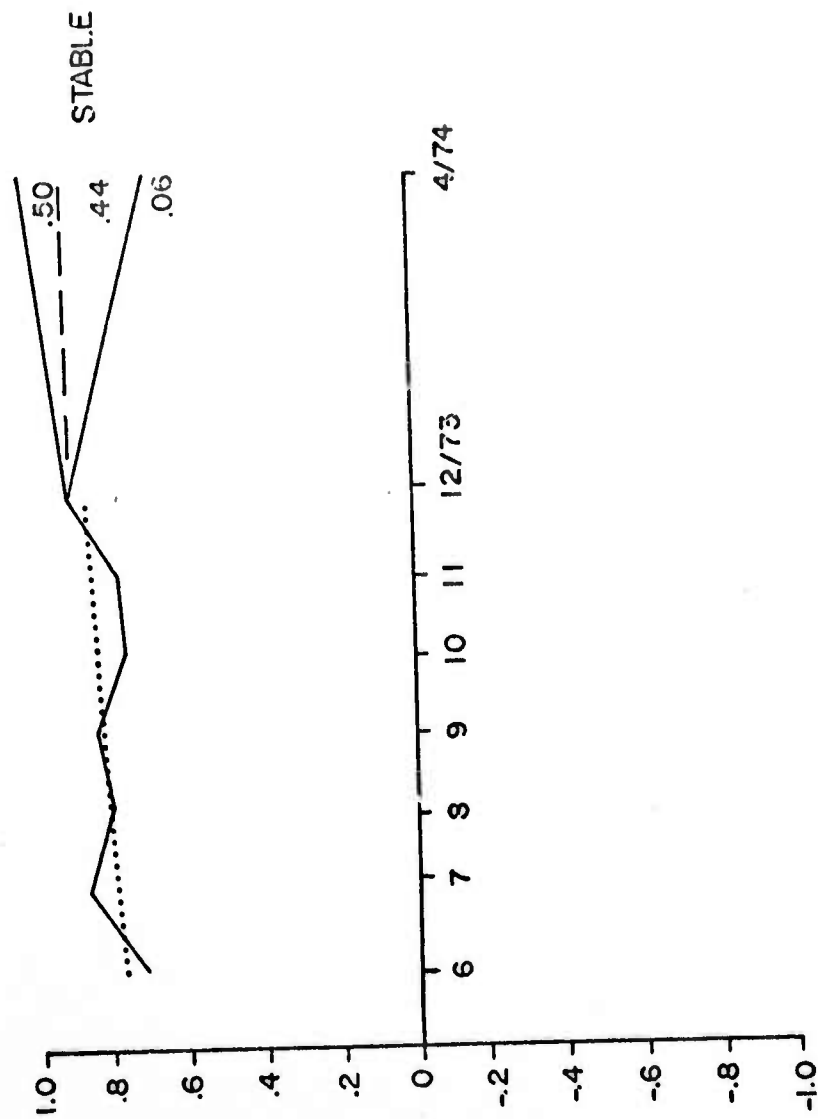


FIGURE 14b. FORECAST OF POLICY STYLE FOR JAPAN→USSR.

In Figure 15a the 3-year trend in Soviet policy style toward Japan is shown. There was a net drop in S from the beginning of 1971 to the end of 1973, but style was relatively stable. An initial decline in S through the middle of 1971 was followed by an increase to 1.0 where S remained for four time periods. The beginning of 1972 marked the start of a gradual decline about which there is some deviation. S reached the lowest value of this time series in the second period of 1973. This was followed by an increase to .83, and relative stability thereafter.

Figure 15b presents the forecast for policy style from the Soviet Union to Japan. The seven most current values of S exhibit a gradual decline from .86 to .68, and there is little variation about this trend. However, since S remains above .60, our forecast predicts that by the end of April 1974 the decreasing trend in S will be reversed. The probability that style will increase to .88 or less is .53. An increase above .88 is assigned a .33 probability. It is not likely that S will continue to decline. There is only a 12 percent chance that S will drop as far as .28 and a 2 percent chance that style will fall below .28. As was the case in forecasting relations between Japan and China, the short-term outlook for Soviet-Japanese relations is that the generally friendly pattern over the last 3 years will continue through April 1974.

Japanese policy style toward the United States, shown in Figure 16a, exhibits considerable variations during the 3-year period. An almost cyclical pattern is evident from 1971 through 1972, where style varied between 1.0 and .30. The low point, .30, in the last period of 1972 was followed by a sharp increase to .85. Throughout 1973 style remained relatively stable compared to the preceding two years. A moderate decline in S through May 1973 was reversed and S increased steadily to .90 by the end of the year. The forecast shown in Figure 16b includes only the seven most current style values. The gradually increasing trend during this period is not large enough to estimate whether S in April 1974 is more likely to increase or decrease from the current value of .90. It is highly probable that any change in S will be small. There is a 94 percent chance that style will lie between .70 and 1.0 in April 1974, and only a .06 probability that S will fall below .70.

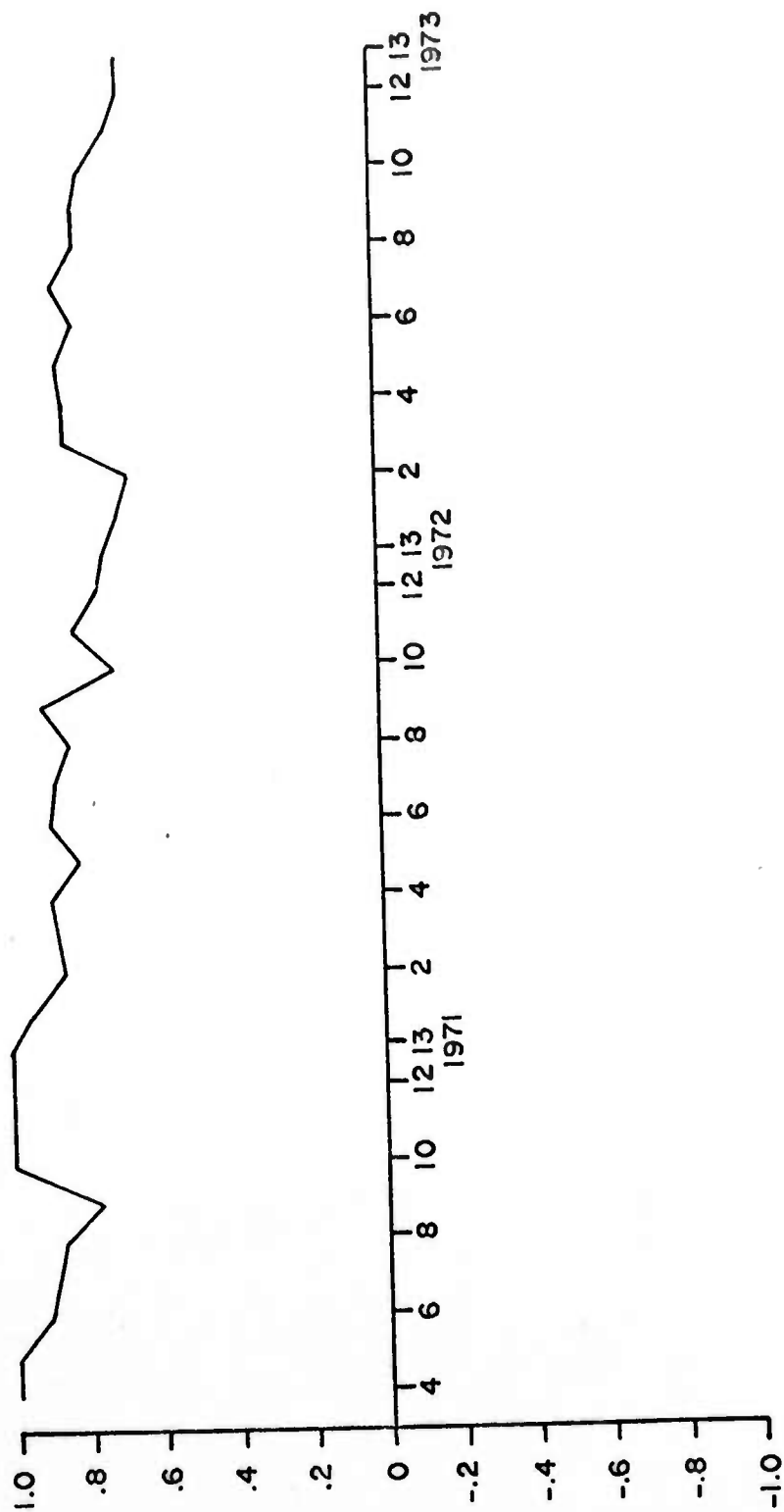


FIGURE 15a. POLICY STYLE FOR USSR → JAPAN.

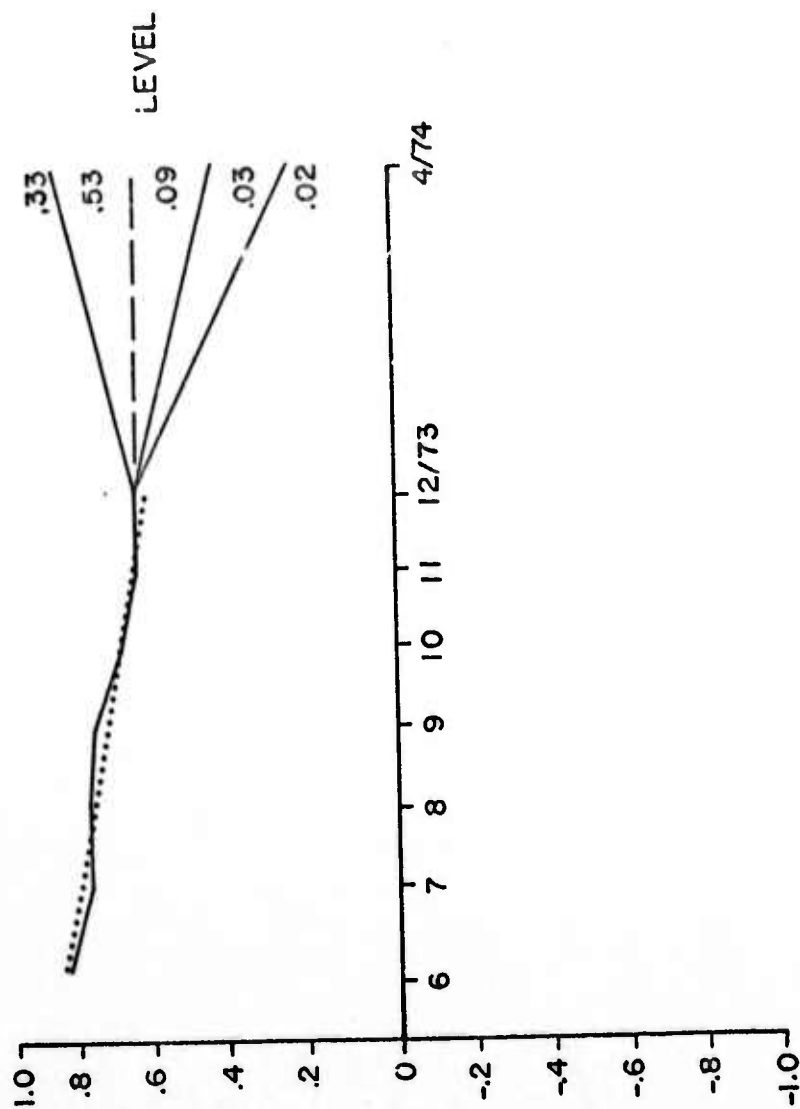


FIGURE 15b. FORECAST OF POLICY STYLE FOR USSR—JAPAN.

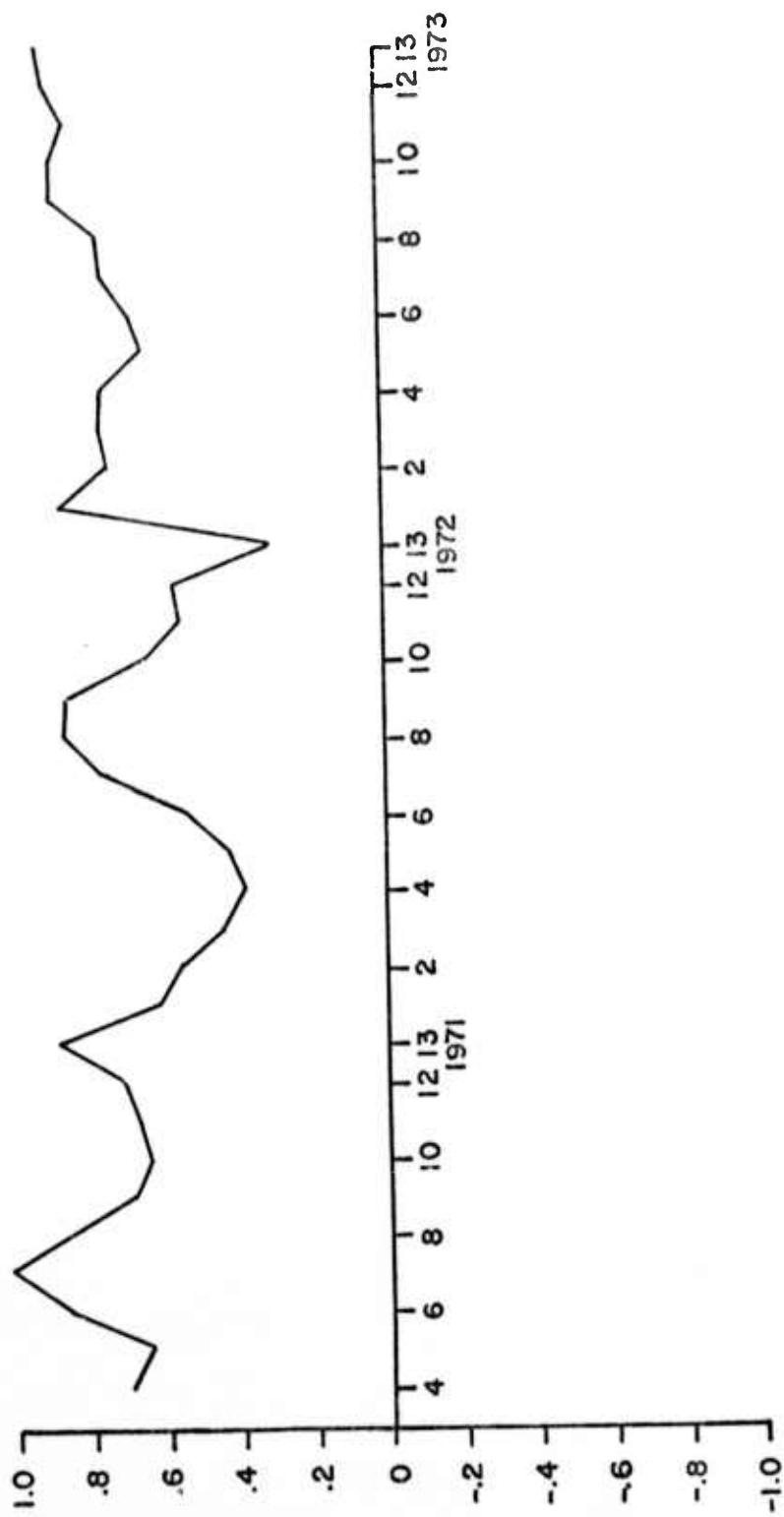


FIGURE 16a. POLICY STYLE FOR JAPAN—US.

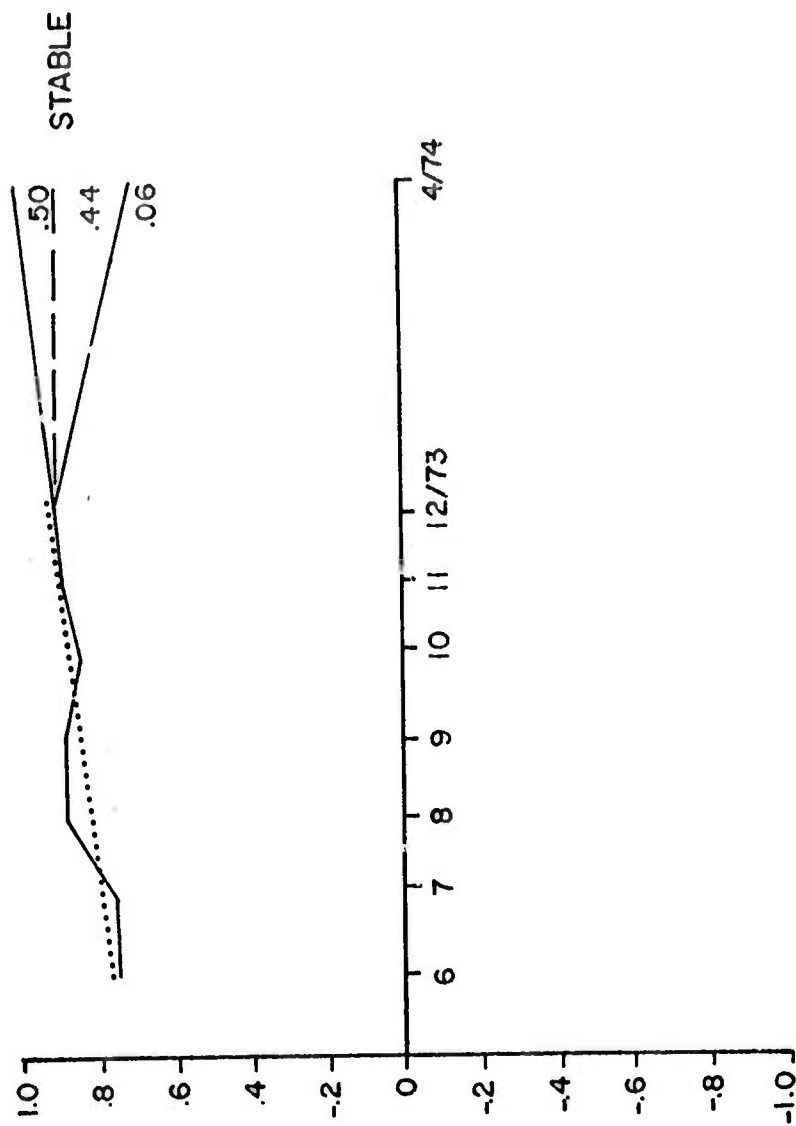


FIGURE 16b. FORECAST OF POLICY STYLE FOR JAPAN→US.

Though there has been a relatively large amount of variation in Japanese policy style toward the United States, the recent trend of stability at this high friendly level will probably continue at least through April 1974.

The forecasts presented here are similar in one respect: the recent trend in friendly relations between Japan and the Big Three powers will continue through April 1974. In two cases we found significant changes in one direction; but as long as policy style remains above .60, it is not likely that we will notice any major shifts in the relations between Japan and these countries in the very near future.

## BIBLIOGRAPHY

- CAMPBELL, D.T. and J.C. STANLEY (1963) Experimental and Quasi-Experimental Designs for Research. Chicago: Rand McNally & Company.
- EZEKIEL, M. and C.A. FOX (1959) Methods of Correlation and Regression Analysis. New York: John Wiley and Sons.
- RUBIN, T.J. (1973a) "International Affairs Indicators for Defense Decision-Making." Arlington, Va.: CACI, Inc. (January)
- \_\_\_\_ (1973b) "Preliminary Investigation of a Technique for the Short-term Forecasting of Selected International Indicators." Arlington, Va.: CACI, Inc. (December)
- RUMMEL, R.J. (1970) Applied Factor Analysis. Evanston: Northwestern University Press.

C.A.C.I.

IIC

WASHINGTON, D.C. OFFICES

THE UTILITY OF ISSUE  
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## BACKGROUND

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### INTRODUCTION

Intelligence analysts, either when performing the warning role or producing estimates, often focus on issues. For example, reports on the border issue between Iran and Iraq are followed more closely by the warning analyst than are general reports on affairs between the two countries. Also, analysts would normally request an estimate of Soviet behavior with respect to the Middle East cease fire, or Soviet priorities in military equipment, rather than a general statement of Soviet activity. Thus, to enhance the utility of quantitative indicators, a capability has been provided to enable an analyst to focus on the issue-related behavior of nations. A system for coding issues has been implemented and a set of issue-related indicators has been constructed. The coding system contains issue codes that are assigned to events. The issue-related indicators produce quantitative measures of issue-related behavior.<sup>1</sup>

The issue context of much intelligence work is one reason for identifying events by issue. There are theoretical reasons as well. In particular, behavior patterns for specific issues may be independent of each other. Hence, different models may be appropriate for understanding and predicting behavior in different issue contexts. Independence among issues results from the existence of ever more specialized foreign-policy actors responsible for increasingly specific issues (Vasquez, et al., 1973; Rosenau, 1966).

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<sup>1</sup> Additional details on issue coding and indicators not given in this section are found in sections VI and VIIF of this report.

Consider, for example, U.S.-Mexican relations during 1972-73 as an illustration of independence among issues. There was a great deal of cooperation at all levels on the narcotics issue including joint activities, coordination of enforcement, and continuous communication between officials of the two nations. On the other hand, negotiations on air routes deteriorated while negotiations on the Mexicali Valley salinity issue created considerable tension. While officials in one office of the U.S. Embassy in Mexico City were enjoying extremely amicable relations with their counterparts at the highest levels in the Mexican Government, officials in the next office were barely able to complete phone calls to an assistant's assistant.

In this paper the utility of issue indicators is evaluated by (1) examining whether, in fact, indicators on the issue level differ from more aggregate indicators, (2) using issue indicators to assess history, and (3) attempting to forecast issue-specific policy style.

#### DEFINITION OF "ISSUE"

For our discussion, issue is defined as a point of contention or debate about some stated condition (often an act, policy, state of relations, or territorial status). There are, however, limitations to this definition. In particular, it does not encompass areas of debate in which the alternatives are unclear.<sup>2</sup> The restrictiveness of the definition is compensated for by the relative simplicity of constructing indicators of issue-related behavior. Examples of these issues include the Japanese institution of a quota for textile exports, Japanese development of oil and gas resources in the Soviet Union, expansion of the Self Defense Force (SDF) in Japan, and Israeli withdrawal to pre-1967 borders.

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<sup>2</sup> The limitation is not unique to our definition of "issue." For example, it applies to a definition of issues in terms of specific proposed "outcomes" (Coplin, et al., 1973).

## THE ISSUE CODE

Japan was chosen as a test case for issue coding. Currently, 59 issues involving Japan have been coded and are shown in Table 1 with four-digit issue codes.

TABLE 1  
ISSUES INVOLVING JAPAN\*

- |      |  |
|------|--|
| 9001 | An international conference should be held to discuss the Vietnam War.                       |
| 3001 | Japan should not provide support for U.S. troops during the Vietnam War.                     |
| 1001 | Japan should not continue to permit U.S. bases on her soil.                                  |
| 4001 | Japan should establish diplomatic relations with North Vietnam.                              |
| 4002 | Japan should establish diplomatic relations with North Korea.                                |
| 4003 | Japan should recognize China and establish diplomatic relations.                             |
| 4004 | China should be represented in the United Nations.   |
| 4005 | Taiwan should be excluded from the United Nations.   |
| 3002 | Japan should increase trade with China.  |
| 4006 | Japan should cease diplomatic relations with Taiwan.   |
| 9002 | Cambodia should be a neutral nation.   |
| 3003 | Japan should not invest in Indonesian oil resources.   |
| 9003 | Japan and the Soviet Union should expand the number of air routes between the two countries. |
| 1002 | The Soviet Union should return the Northern Territories to Japan.                            |

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\* Issues are expressed in terms of non-status quo propositions. New issues will be added to the current list as they arise.

- 3004 There should be increased trade between Japan and the Soviet Union.
- 3005 The Soviet Union should permit Japanese fishermen in the waters of the Northern Islands.
- 3006 Japan should be involved in the development of Soviet oil, coal, and gas.
- 3007 Japan should be involved in the development of Russia's timberlands.
- 1003 Okinawa should revert to Japan.
- 1004 The United States should not have nuclear devices on its bases in Okinawa.
- 3020 The United States should grant Japan more trade concessions.
- 9006 Japan should develop a nuclear capability.
- 3021 Japan should increase investment in Southeast Asia.
- 3022 Japan should import more from Southeast Asia to adjust balance of payments.
- 3023 Japan should import more from Asia to adjust balance of payments.
- 3024 Japan should increase trade and/or economic investment with the EEC.
- 3025 Japan should extend economic/technical aid to Arab nations.
- 3026 Japan should extend economic/technical aid to China.
- 2003 Japan should take an active role in seeking a Middle East settlement.
- 4008 Japan should recognize Prince Sihanouk's government-in-exile as the rightful government of Cambodia, and break relations with the Lon Nol regime.
- 4009 Japan should break diplomatic relations with Israel.
- 2004 Japan should ratify the nuclear non-proliferation treaty.
- 3027 Japan should lower its fishing quotas in the Northwest Pacific.
- 1009 Senkaku Island should be returned to Japan.
- 2005 The Soviet Union and Japan should form a collective security system in Asia.

- 2006 China, the United States, and Japan should form a collective security system in Asia.
- 2007 China and Japan should form a collective security system in Asia.
- 3028 Japan should participate in the development of the North Sea oil resources.
- 1005 The United States should not have poisonous gases on its bases on Okinawa.
- 3009 Japan should finance part of the U.S. military that defends Japan.
- 1006 U.S. bases in Japan should not be allowed to receive ships that carry nuclear weapons.
- 2001 Japan and the United States should not retain a security treaty for mutual defense.
- 3010 There should be a Japanese textile export quota.
- 3011 Japan should reduce its import quotas.
- 3012 Japan should revalue its currency.
- 3013 Japan should reduce its capital investment overseas.
- 3014 The United States should place no limits on the export of technology to Japan.
- 1007 The United States should withdraw completely from the Ryukyus.
- 3015 Japan should increase its investment in North Vietnam.
- 3016 Japan's investment in the United States should be reduced.
- 3017 Japan's investment in Australia should be reduced.
- 9005 Japan should rebuild its military power beyond the "self-defense" state.
- 3008 Japan should not invest (financially and technologically) in the Middle East.
- 9004 Japan should adhere to international trade agreements (e.g., Kennedy round).
- 4007 The Soviet Union should conclude a peace treaty with Japan.

- 2002 The United States should withdraw from Vietnam/Indochina.
- 1008 Japan should support Korean reunification.
- 3018 Japan should support the Arabs in the Middle East.
- 3019 Japan and North Korea should increase trade.

The first digit of the four-digit issue codes (1,2,3,4, or 9) links the issue to one of the "issue-areas" shown in Table 2. Rosenau, who devised the issue-area typology, argues that "the functioning of any type of political system can vary significantly from one issue-area to another" (Rosenau, 1966). The issue-area codes provide a basis for aggregating issue data into an intermediate level between the issue level and the fully aggregated level. The intermediate level is potentially helpful in analyzing and estimating international behavior because, as Rosenau argues, processes of behavior may vary across issue-areas.

TABLE 2

Issue-Areas

- |                             |
|-----------------------------|
| 1. Territorial Area         |
| 2. Human Resources Area     |
| 3. Nonhuman Resources Area  |
| 4. Status Area              |
| 5. None of above or unclear |

An issue belongs to a particular issue-area when it pertains to the allocation of a particular type of value (territorial, human resource, non-human resource, or status). For example, the Okinawa issue is in the territorial area because the issue pertains to the allocation of territory; any diplomatic recognition issue is in the status area. The last three digits in the issue code simply identify an issue number.

An issue code is assigned to an event when the event is unambiguously "about" the issue, that is, when the event contains an explicit reference to the issue, to any meeting or conference in which the issue is discussed, or to someone's position on the issue, or when the event constitutes the realization or negation of the condition at issue. The following list contains a number of events that may be about an issue.

1. An expression of preference or position regarding the issue; for example, preference for or against an act, policy, or state of relations, or preference for territorial status.
2. A meeting about the issue.
3. A comment about issue-related meetings or negotiations.
4. A refusal to take a position.
5. A discussion of implications, in any area, of different resolutions of the issue or of settlement in general.
6. An assessment of the likelihood of one or more particular resolutions, or any resolution at all.
7. A comment about another's position.
8. A statement of a requirement to bring about a resolution.
9. A statement of fact given in support of a position.

#### THE ISSUE POSITION CODE

The current definition of issue is built around the idea of a condition which, in the view of an actor, should or should not exist. Some acts

express a preference for or against the condition at issue. The issue position code records such a position as either supporting (code = 1) or opposing (code = 2) the condition. As a convention, positions on the non-status quo condition are recorded. For example, on the Okinawa issue, the position is recorded in terms of opposition to or support for reversion (the non-status quo condition); on the Japan textile export quota issue, the position is recorded in terms of opposition to or support for a quota (the non-status quo condition).

Each issue in Table 1 is stated in terms of a non-status quo proposition in order to facilitate issue-position coding. The coder gives an issue position code of "1" if the event supports the proposition, and a code of "2" if the event opposes the proposition. Not every issue-related event contains a position. When no position is taken, the space for the position code is coded zero. To be coded as having a position, the event must explicitly express a position, that is, contain a statement of or express a belief, request, or demand that the condition should or should not exist.

### EVALUATION OF THE ISSUE HYPOTHESIS

The hypothesis underlying the effort to code events according to issues is that the behavior of a nation within an issue category may differ from its overall behavior pattern, and may differ from behavior in relation to other issues. Both issue emphasis and policy style on issues may differ. From an intelligence point of view, indicators of behavior in divergent issues can be helpful in warning the analyst of potential changes that would otherwise be submerged in an overall pattern of activity. If this hypothesis is true, these issue-specific indicators could be useful in assessing past trends and estimating future developments.

In order to test the hypothesis, the Foreign Broadcast Information Service Bulletin (FBIS) data for Japan were coded by issue. Using the data, it is possible to compare overall patterns of behavior with behavior pertaining to specific issues, and to illustrate the use of an issue-emphasis indicator. The following illustrations are drawn for the 3 years of FBIS data (1971-73).

### ISSUE EMPHASIS

Five of the more active international issues for Japan during the 1971-1973 period were the following:

- Should Japan recognize the People's Republic of China?
- Should Japan increase trade with the People's Republic of China?
- Should Japan invest in Soviet oil and gas development?
- Should Okinawa revert to Japan?
- Should Japan support the Arabs in the Middle East dispute?

Figure 1 reviews Japan's emphasis on these issues. "Issue emphasis" is calculated as the percentage of all Japanese activity dealing with an issue.<sup>3</sup>

The data are plotted for the thirteen 12-week periods in 1971-1973. The period begins with much emphasis on the following issues: recognition of China, trade with China, and reversion of Okinawa to Japan. By following these issues through the entire period it can be seen that the recognition issue peaked in September 1972 when recognition actually occurred and then diminished; the Okinawa case became a dead issue in June 1972 when Okinawa formally reverted to Japan; the issue of trade with China declined in intensity when increasing trade became a reality, particularly after December 1971 when a \$90 million trade agreement was signed.

Throughout approximately the last two-thirds of the period, investment in Soviet oil and gas development became an issue and was not resolved by the end of the period. The issue of Japanese support of the Arabs surfaced in the middle of the period, increased in intensity during the period of the October war, and remained an important issue at the end of the period.

Figure 1 demonstrates that relative emphasis on issues varies over time, and that an issue-emphasis indicator can be useful in assessing past trends.

#### ISSUE STYLES

In addition to computing issue emphasis, a style<sub>q</sub> ( $S_q$ ) indicator can be constructed for each issue in order to test the hypothesis that issue-specific indicators may differ from an overall behavior indicator.<sup>4</sup> The

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<sup>3</sup>This and other issue indicators are described in section VIIF of this report.

<sup>4</sup>The  $S_q$  indicator measures the general quality of behavior of one nation toward<sup>q</sup> another. Large positive values of  $S_q$  indicate a predominance of friendly actions while large negative values<sup>q</sup> indicate a predominance of unfriendly actions. A value below -1.0 indicates the occurrence of extraordinarily unfriendly acts. For details on the calculation of  $S_q$ , see section VIIE of this report.

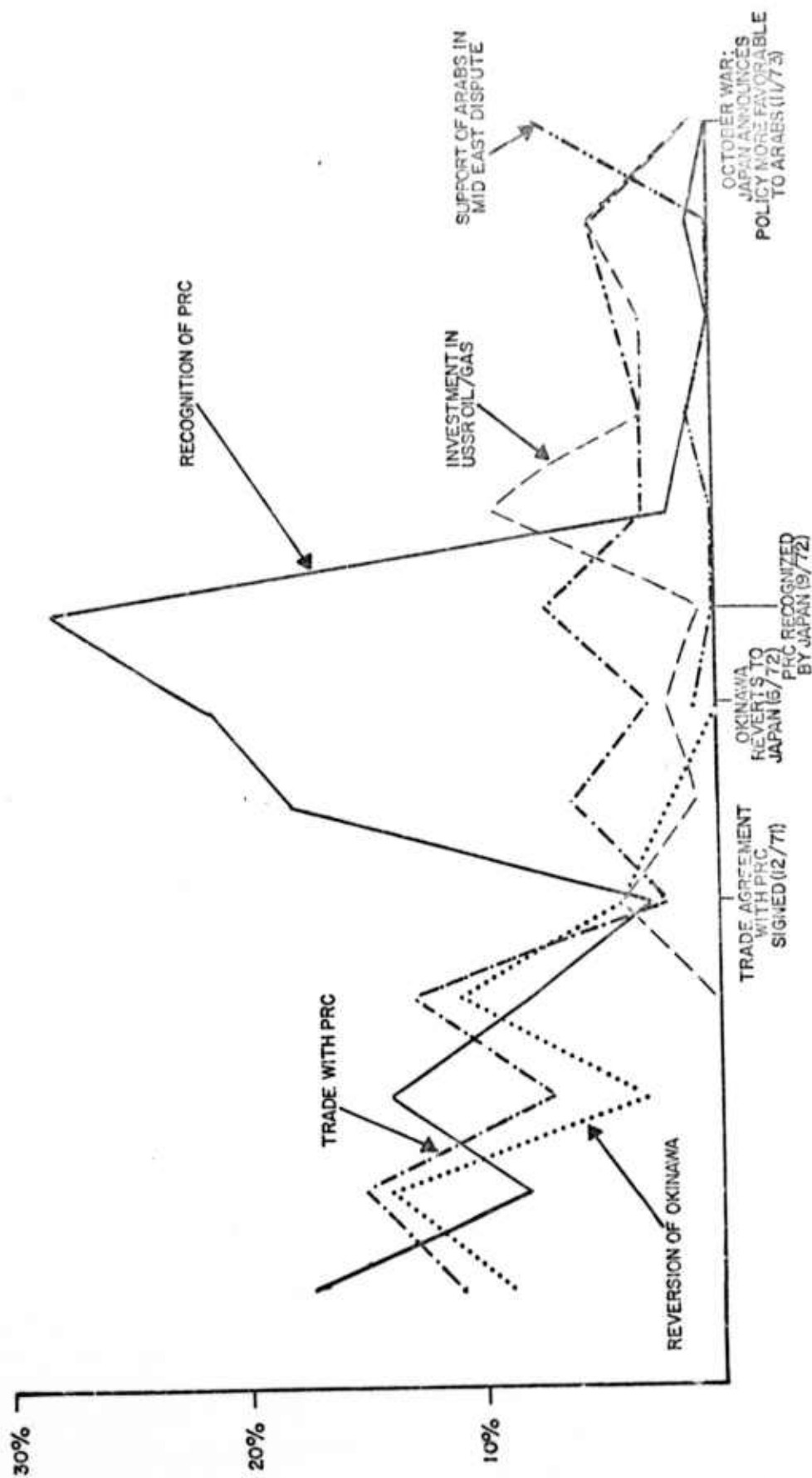


FIGURE 1. ISSUE EMPHASIS, 1971-1973.

following comparisons using the  $S_q$  measure were chosen to highlight differences between an overall pattern and a pattern specific to an issue:

1. Comparison of overall Soviet policy style ( $S_q$ ) toward Japan with Soviet policy style ( $S_q$ ) toward Japan on issue 3006 (Japan should be involved in the development of Soviet oil and gas).
2. Comparison of overall Soviet policy style ( $S_q$ ) toward Japan with Soviet policy style ( $S_q$ ) on issue 3005 (The Soviet Union should permit Japanese fishermen in the waters of the Northern Islands).

#### Japan and the Soviet Union on Issue 3006

Figure 2 shows the overall Soviet policy style ( $S_q$ ) toward Japan by 12-week periods for the full 3 years of data. Figure 3 shows Soviet policy style ( $S_q$ ) toward Japan on the issue of Japanese involvement in the development of Soviet natural gas and oil.

Figures 2 and 3 dramatically illustrate different behavior patterns on the part of the Soviet Union. In the aggregated style ( $S_q$  in Figure 2) several extraordinarily unfriendly Soviet acts occurred. These actions, including the seizure of fishing vessels off the Northern Islands, pulled the overall  $S_q$  measure below -1.0. In Figure 3, no such extraordinarily unfriendly acts occurred and the style indicator showed no drop in relations similar to overall style.

#### Japan and the Soviet Union on Issue 3005

Figure 4 shows the Soviet style toward Japan on the issue of Japanese fishing rights in the waters off the Northern Islands. When comparing this style ( $S_q$ ) plot with the overall style ( $S_q$ ) for the Soviet Union we find that this issue accounts for all of the extraordinarily unfriendly acts and, as a result, closely mirrors the overall style measure.

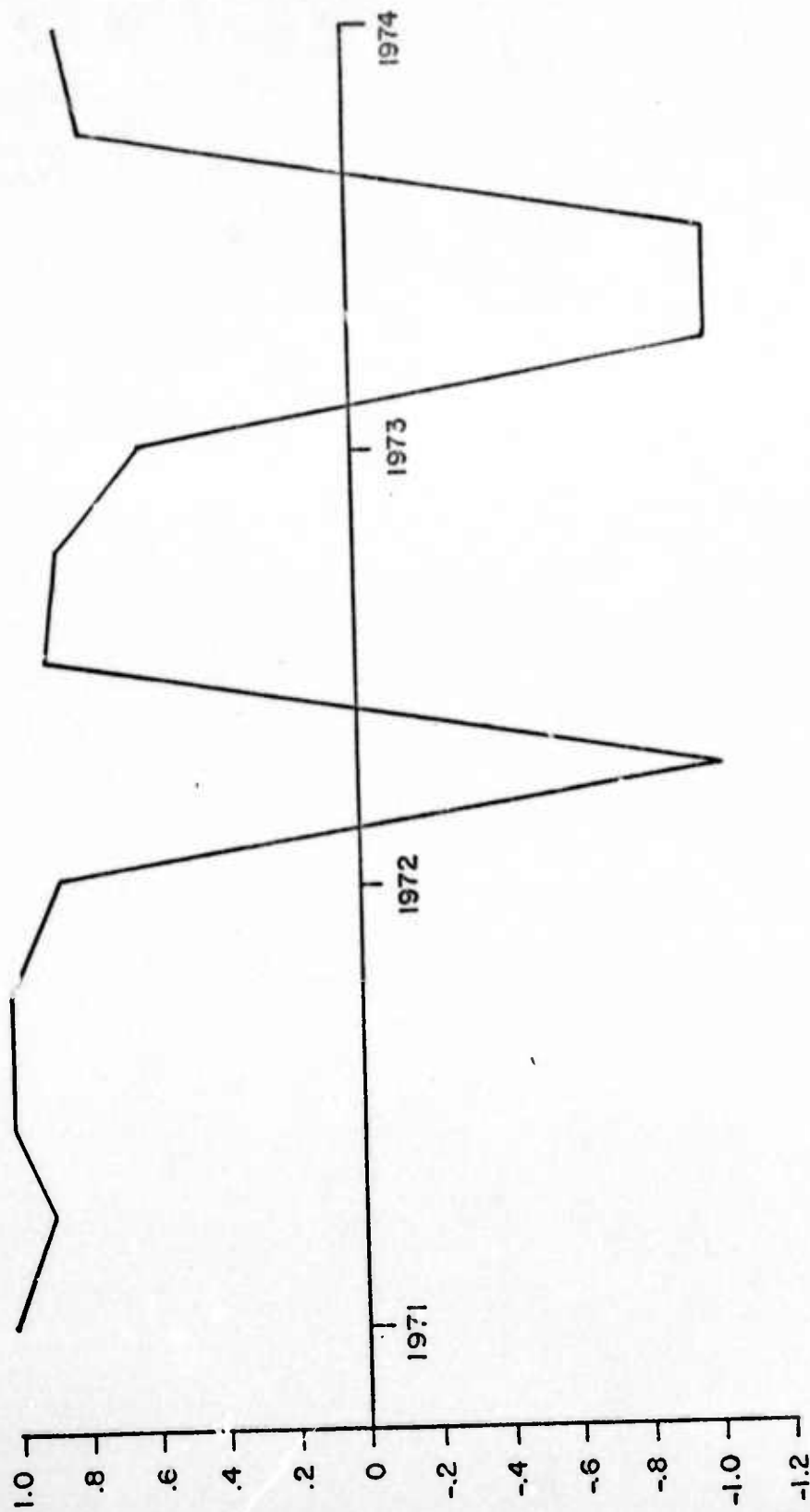


FIGURE 2. OVERALL USSR—JAPAN STYLE $\bar{q}$ .

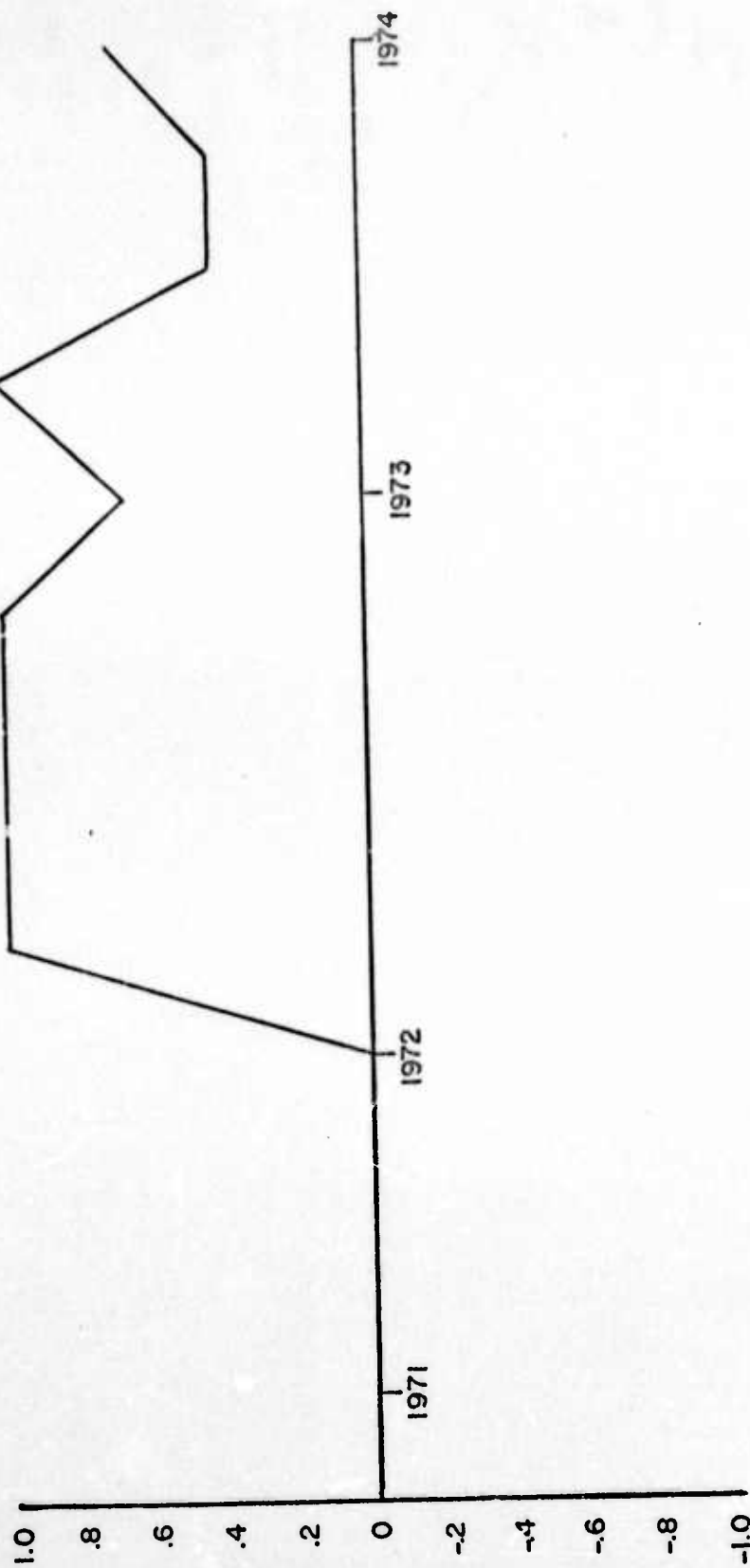


FIGURE 3. USSR  $\rightarrow$  JAPAN STYLE<sub>q</sub> ON THE ISSUE: JAPAN SHOULD BE INVOLVED IN THE DEVELOPMENT OF SOVIET OIL AND GAS.

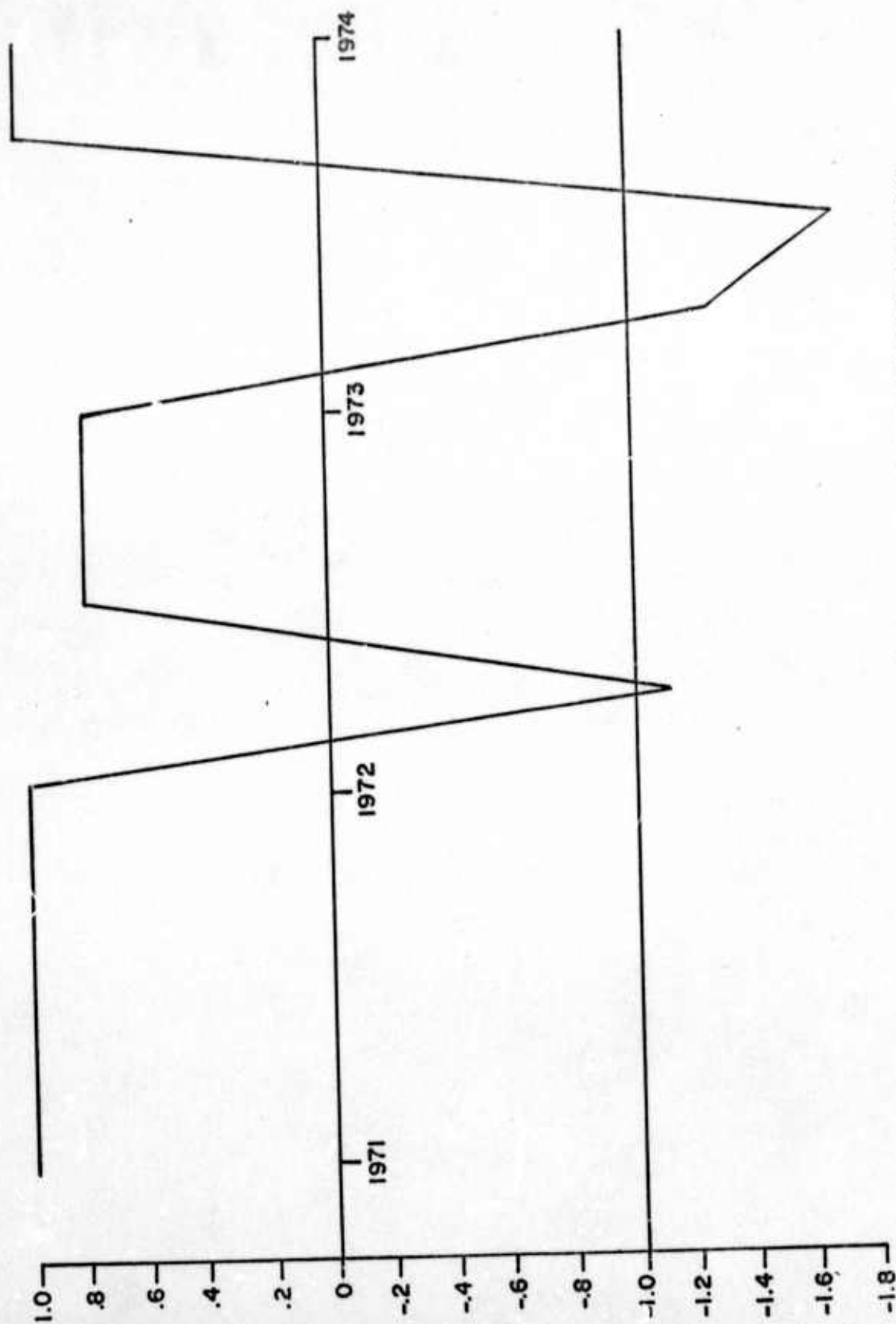


FIGURE 4. STYLE OF USSR—JAPAN ON THE ISSUE: THE SOVIET UNION SHOULD PERMIT JAPANESE FISHERMEN IN THE WATERS OF THE NORTHERN ISLANDS.

These examples illustrate the potential utility of disaggregating indicators to the issue level in order to discriminate between an overall style and style specific to an issue.

#### ISSUE FORECASTING

In addition to examining issue emphasis and style, forecasts of future issue styles are possible. Figure 5 presents a forecast of policy style from the Soviet Union toward Japan concerning the issue of Japanese development of oil and gas resources in the Soviet Union.<sup>5</sup> The policy style indicator is smoothed by calculating S for 16-week periods with moving 4-week intervals and hence differs from the unsmoothed version in Figure 3. Style is forecast for the 16-week period ending in April 1974. It can be seen that the overall trend in S has been downward since July 1973. However, our estimate predicts that a moderate increase in Soviet style regarding this issue is likely by April 1974. There is a 52 percent chance that S will lie between 0 and +.20, and a 28 percent chance that S will increase beyond +.20. The probability that style will fall below the present value of -.20 is only .14. Although it is highly probable that Soviet style toward Japan for this issue will increase, it is most likely that S will still lie within the neutral area. Assuming that issue resolution would be indicated by a very high value of policy style due to agreements and an absence of conflictive activity, it seems unlikely that this issue will be resolved in the near future.

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<sup>5</sup>The trend forecasting method is described in section IIB of this report. Our use of the probability distributions described therein assumes that probability distributions for overall behavior can be validly applied to issue-specific behavior. Theory discussed at the start of this paper suggests that this assumption may not be a good one. Thus, the estimate should be considered illustrative. While probability distributions contingent on issue types should be examined, our data are not yet adequate to allow this to be done.

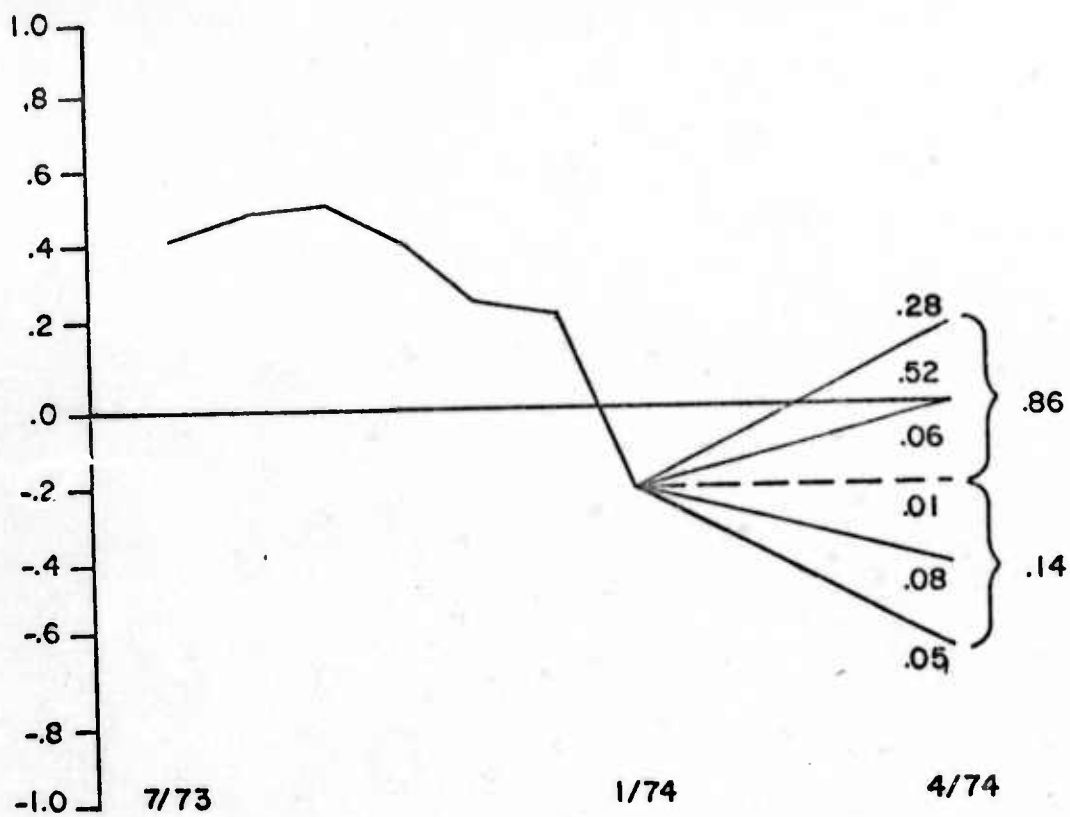


FIGURE 5. FORECAST OF USSR→JAPAN STYLE ON THE OIL AND GAS DEVELOPMENT ISSUE.

## CONCLUSION

Three possible uses of issue-related indicators have been illustrated. They can be used to assess historical emphases, discriminate among different behavior patterns on different issues, and forecast components of an overall pattern of behavior. The hypothesis underlying issue coding is confirmed. A nation's behavior pattern (both in terms of emphasis and style) can differ across issues.

## BIBLIOGRAPHY

- COPLIN, W.D., S.L. MILLS, and M.K. O'LEARY (1973) "The PRINCE Concepts and the Study of Foreign Policy." In Patrick J. McGowan (ed.) The International Yearbook of Foreign Policy Studies. Beverly Hills: Sage Publications.
- ROSENAU, J.N. (1966) "Pre-theories and Theories of Foreign Policy." In R. Barry Farrell (ed.) Approaches to Comparative and International Politics. Evanston: Northwestern University Press.
- VASQUEZ, J.A., J.R. HANDELMAN, M.K. O'LEARY, and W.D. COPLIN (1973) "Color It Morgenthau: A Data-Based Assessment of Quantitative International Relations Research." A paper prepared for delivery at the International Studies Association National Convention.

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## THE APPLICATION OF MARKOV CHAIN ANALYSIS TO THE CZECH CRISIS OF 1968

Herbert Calhoun

Dale Dean

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## CONCLUSIONS

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1. The results of applying Markov chain analysis to the task of estimating the dynamics of interaction in the Czech-Soviet crisis have been encouraging. The analysis appears to reflect the dynamics of the interaction process.
2. The model consistently predicted that relations would tend toward two patterns of interaction--discrepancy and hostility. This did in fact happen.
3. The timing of pattern shifts was not always accurately predicted.
4. The use of information about short-term changes in behavior improved the predictions.
5. The analysis suggests that future research should be directed to computing pattern-to-pattern transition matrices directly from the events in the interaction sequences.

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## INTRODUCTION

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The intelligence agency is responsible for assessing current situations and estimating future developments in areas of concern to U.S. policy. To accomplish these tasks, the intelligence officer must analyze and reach conclusions on all aspects of national development in these areas. He presents his assessments and estimates as descriptive narrative or interpretive commentary.

The position taken in this paper is that aspects of his analysis can be reduced to quantitative statements. The purpose of this study is to illustrate how this approach can be used in estimating the likelihood of change in the patterns of actions between nations.

An important problem facing the intelligence analyst is that of determining the likelihood of improved or deteriorating relations between pairs of nations. The analyst's task is to organize and analyze recent event interactions to determine their impact on the existing relationship between the nations. Such an analysis is often based on incomplete evidence and results in generalized descriptions and estimates that use such phrases as "probably," "very likely," and "chances are better than ever." This use of probabilistic words which do not convey agreed upon meanings has left intelligence estimating open to the charge of "acting the oracle whose prophecies seek to cover all contingencies" (Zlotnick, 1970). As a result of such charges, the producers of intelligence have been pressed to formulate their estimates more precisely and especially to use numeric statements of probabilities (Kelly, 1972). There are several probability-based techniques available for predicting and estimating, including Markov chain analysis, Bayesian statistical analysis, and classical probability theory.

This study demonstrates the potential use of Markov chain analysis in short-term estimating. Markov analysis is based on the premise that "the way to predict what a nation will do toward another is to project into the future

what it has done in this regard in its recent past" (McClelland, 1967). In this way, variables and indicators that reflect past activities can be used to predict future behavior.

The following analysis illustrates the application of a probability model to quantitative indicators to solve a typical intelligence problem: predicting the trends in behavior between two nations, given recent information on their interactions. What is exploratory and new in this study is the use of aggregated event data in the form of quantitative indicators. These indicators reveal the flows and patterns of actions and reactions between pairs of nations. Basic to the indicator technology is the belief that actions, recorded as event data, are a most effective source of information on national policy.

The intelligence analyst is required to predict both the occurrence of specific events as well as general trends. At the moment, new techniques are less effective than the analyst's subjective judgment which combines wider knowledge and experience in predicting specific events. But the analyst can be greatly assisted in trend analysis by quantitative techniques that aggregate events to produce time series output in mathematical or graphic form.

A very useful way to represent aggregations of events and describe the shifts over time is to use a time series indicator developed by CACI and referred to as the "policy style measure" ("S").<sup>1</sup> This measure attempts to present, in concise form, the general characteristics of exchanges between two countries for a period of time. These exchanges may be friendly, unfriendly, or neutral. The measure is computed for each actor in a dyad and represents the difference in the proportions of positive and negative events as they are weighted by the total number of relevant events. It is computed as follows:

$$S_i^t = \frac{\Sigma P - \Sigma N}{\Sigma P + \Sigma N + \Sigma \frac{NE}{2}}$$

Where:  $i = 1, 2$

$t$  = the time interval under consideration

$P$  = the number of positive actions at time  $t$

$N$  = the number of negative actions at time  $t$

$NE$  = the number of neutral actions at time  $t$

Interpreting dyadic behavior in the behavior space is simply determining where the two style curves fall within the space as well as where they

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<sup>1</sup> This indicator was first used by Rubin (1970). It was suggested by Lasswell (1965).

fall with respect to each other. For instance, if both fall below the neutral or zero axis, the expressed behavior may be described as unfriendly to hostile whereas if they both fall above the axis, the behavior may be described as friendly. On the other hand, if one falls above the axis and the other below but both are relatively close to it, the expressed behavior may be described as indifferent. And finally, if one falls above the axis and the other below and one or both are far away from it, the expressed behavior may be described as discrepant. The four basic characterizations, referred to as "basic behavior patterns," are presented in Figure 1.

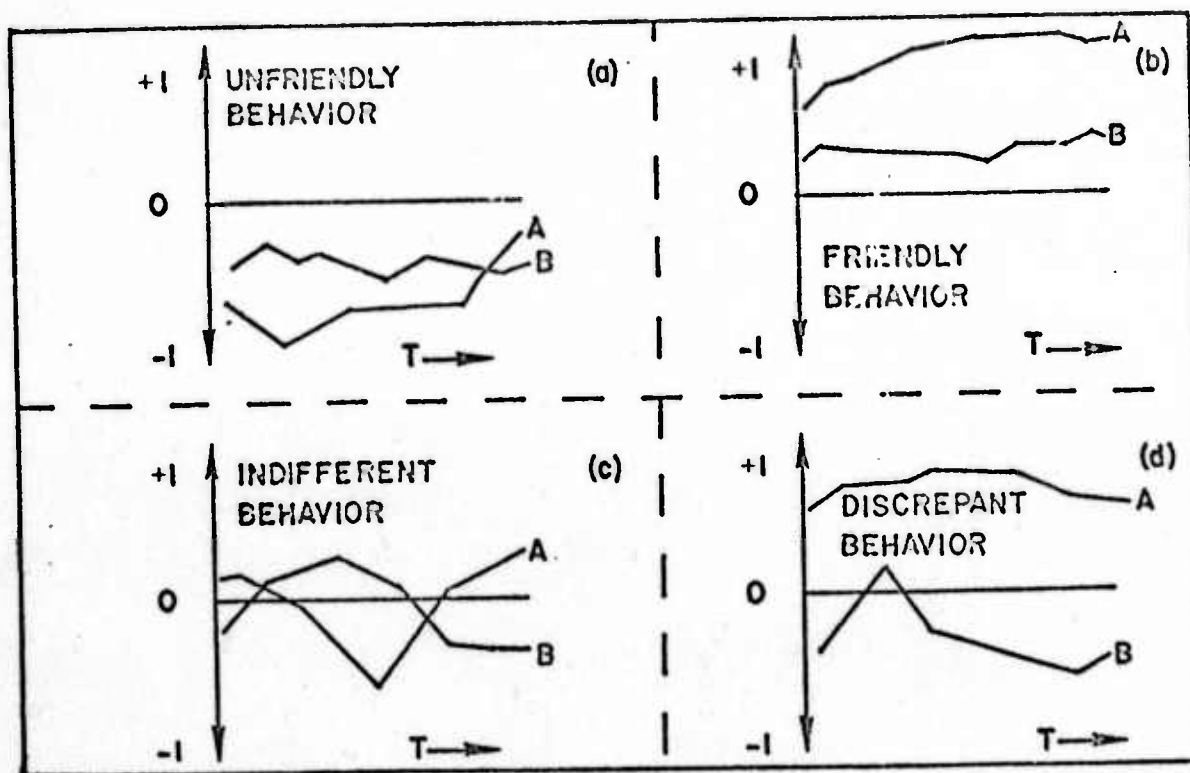


Figure 1. Basic Behavior Patterns

When the style indicator is plotted across time from +1 to -1 for a given dyad, the space generated may be similar to that depicted in Figure 2.

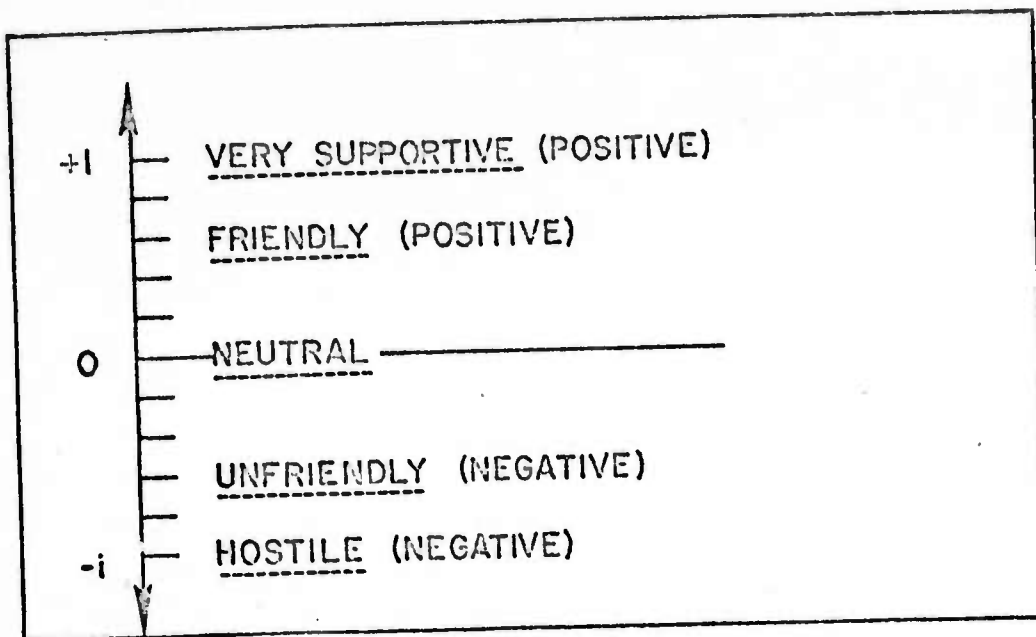


Figure 2. Policy Style Behavior Space

Figure 3 is an example of a style plot for the U.S. interactions with the People's Republic of China from 1968 through 1972.

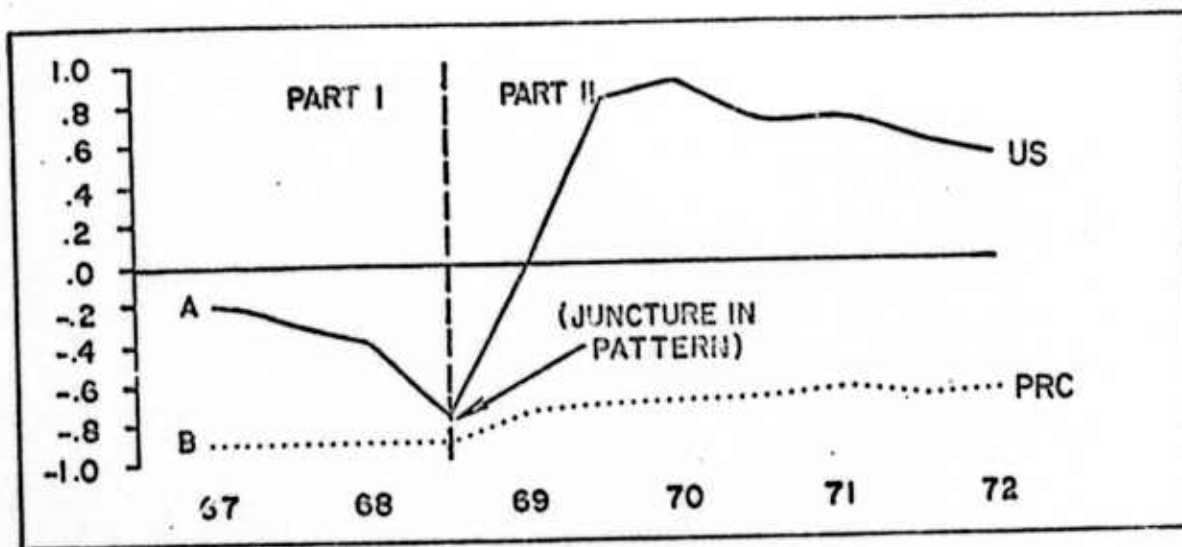


Figure 3. Policy Style for U.S.-PRC

The plot is partitioned into two abrupt qualitative discontinuities, showing that two general patterns have occurred in the interactions between the United States and the People's Republic of China in the last 6 years. The first pattern (Part I) is unfriendly or hostile whereas the second (Part II) is discrepant. Behavior patterns embody the essence of sustained foreign policy attitudes and behavior established by nations over moderately long periods of time. A change in pattern occurs only when the data indicate that the neutral line is crossed.

In our search for useful units of analysis we considered another construct referred to as a "behavior state." A behavior state is behavior that corresponds to the interval between slope changes. Figure 4 depicts examples of behavior states as they appear in the U.S.-Soviet dyad. Notice that an arrow appears at each point where a detectable change in the slope of the respective style curve occurs.

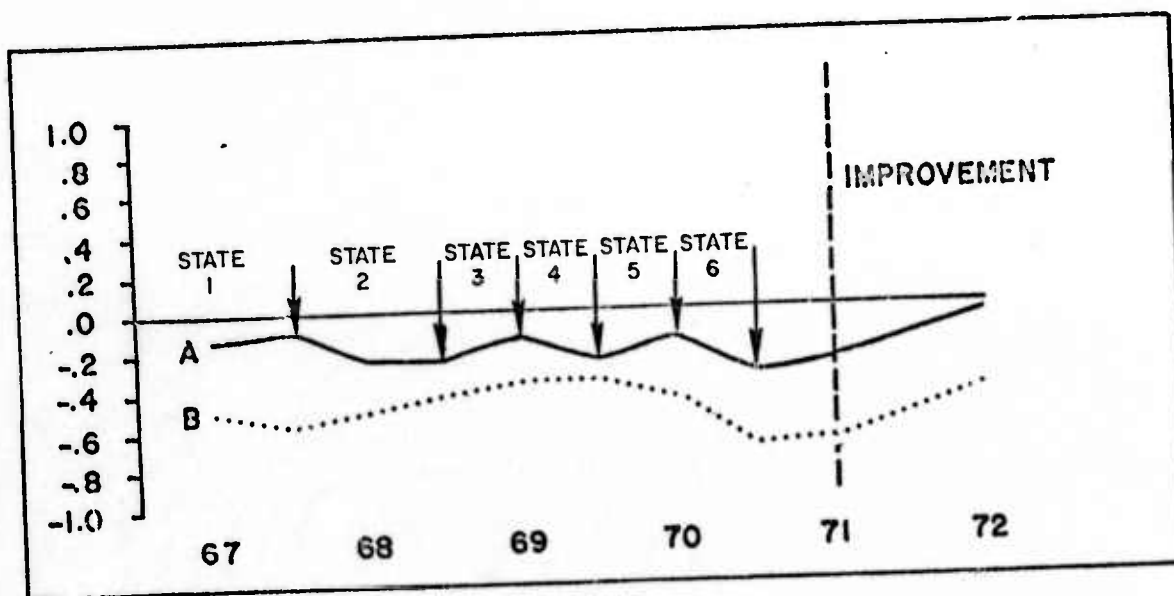


Figure 4. Behavior States of U.S.-Soviet Dyad

A change in the behavior state indicates a short change in the direction of behavior of at least one actor. The number of possible ways of defining unique states are presented in Table 1.

TABLE 1  
Structural Behavior States

- $S_1$  = Mutual increase in positive (friendly) behavior
- $S_2$  = Mutual decrease in positive (friendly) behavior
- $S_3$  = Mutual increase in negative (unfriendly) behavior
- $S_4$  = Mutual decrease in negative (unfriendly) behavior
- $S_5$  = Non-mutual, opposing behavior
- $S_6$  = Transient behavior
- $S_7$  = Decrease in discrepant behavior
- $S_8$  = Increase in discrepant behavior
- $S_9$  = Stable behavior

International dyadic behavior may be described by a pair of style lines moving through time. As new situations arise, the direction of the line changes and new states and patterns emerge. The relevant character of the interaction is determined by the changes. States and patterns are similar in that the type of behavior described by both is the same; therefore the labels attached to them are alike. But states represent fast-moving, subtle changes in behavior while patterns represent slower moving, more dramatic changes. In the following section, the Czech crisis of 1968 is analyzed to demonstrate how behavioral patterns and states can be used to predict future trends.

Events Leading to the Crisis

Figure 5 is a policy style plot of Soviet-Czech interactions based on the Foreign Broadcast Information Service Bulletin (FBIS) event data from January 1968 through 20 August 1968, partitioned into behavior patterns. Figure 6 is a similar plot partitioned into behavior states with behavior patterns marked by arrows. A brief synopsis of the events that led to the crisis will put the policy style plots into proper historical perspective.

Alexander Dubcek succeeded Antonin Novotny as First Secretary of the Communist Party of Czechoslovakia (CCP) on 5 January 1968, thereby accelerating the impetus to liberalize Czech political and economic life. During February, as the more conservative anti-reform officials began to leave office, Dubcek reaffirmed Czechoslovakia's loyalty to the Soviet Union and his support for East Germany. He was also host to a Brezhnev visit toward the end of the month. During March, more conservative officials resigned, including Novotny (22 March). On 23 March Dubcek met with Soviet and other Warsaw Pact leaders in Dresden. In that meeting concern was expressed about anti-Socialist tendencies in Czechoslovakia.

On 5 April the new "Action Program" of the CCP was published. It called formally and officially for a liberalization of the Czech economic and political life and for an end to some of the more coercive aspects of Communist Party rule. The Central Committee of the Soviet Union's Communist Party issued a statement on 10 April reemphasizing the Dresden meeting and reaffirming its willingness to do what was necessary to strengthen the Socialist commonwealth. Shortly thereafter, a Pravda article appeared indirectly attacking the Action Program's conception of the CCP and its role in society. By the end of April criticism was flying in the Czech press of past Soviet conduct toward Czechoslovakia and vice versa. These negative actions are reflected by the fall of both policy style values into the unfriendly behavior space after the week ending 23 April 1968. (See Figures 5 and 6).

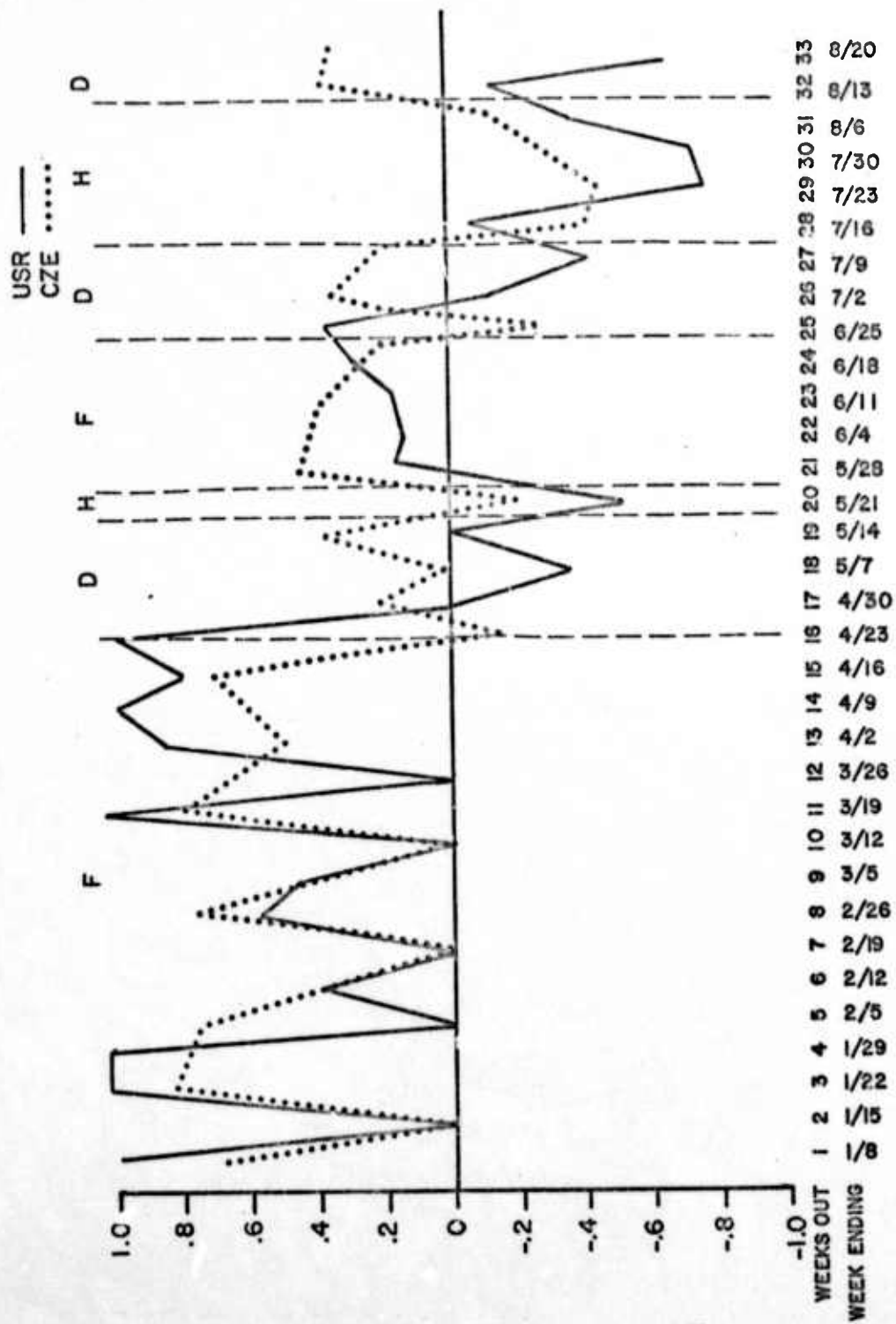


Figure 5. Soviet-Czech Behavior Patterns (January-August 1968).

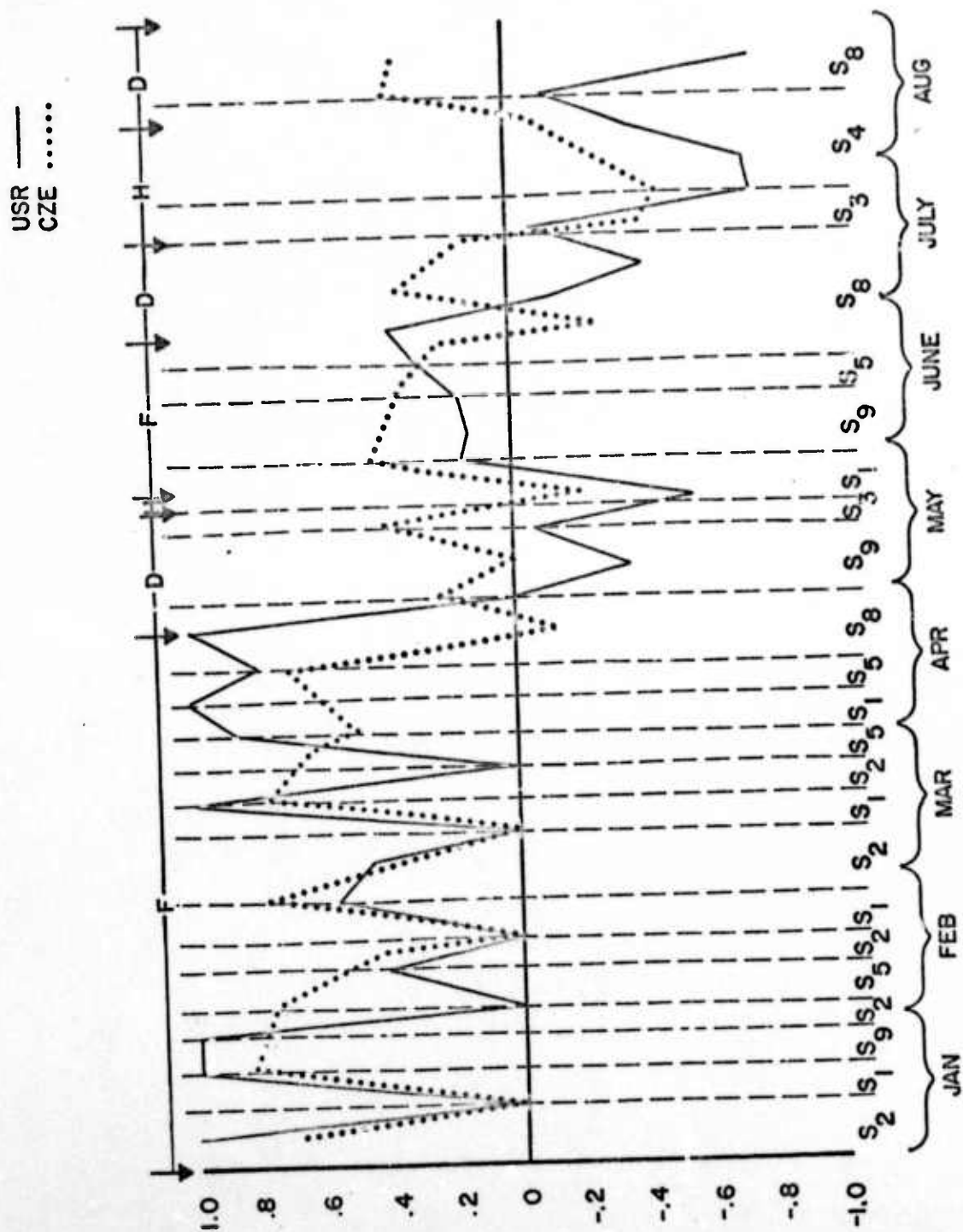


Figure 6. Soviet-Czech Behavior States (January-August 1968).

In early May events began to accelerate. An anti-Communist demonstration was held in Prague. Dubcek flew to Moscow for another meeting at which the Soviet Government expressed deep concern that democratization was beginning to threaten Socialism. On 8 May the Soviet press began a sustained verbal attack against Czechoslovakia. This attack is reflected in Figure 5 by the drop in Soviet and Czech policy style by the week ending 21 May. Both style lines at this point fall into the negative area as their relations began to form a hostile pattern.

On 9 May Soviet and Warsaw Pact troops were reported to be holding maneuvers in Poland near the Czech border. Dubcek met with Soviet Premier Kosygin and Marshall Grechko on 17 May and agreed to allow Warsaw Pact maneuvers in Czechoslovakia.

On 29 May the Central Committee of the CCP met and ousted Novotny from the Party. A special Party Congress was set to convene on 9 September. Speaking at the meeting Dubcek called for democratization but under strict leadership of the CCP. During early June Warsaw Pact troops held maneuvers in Czechoslovakia. On 27-28 June, the "2000 Words" manifesto calling for renewed efforts to liberalize Czech society appeared. The CCP condemned it, warning against counterrevolutionary tendencies. At this point Soviet policy style began to decline rapidly into hostility. At the same time Czech style began to rise reflecting the Czech Government's renewed attempts to reassure the Soviet Union. By now the Soviet attitude had hardened and the Czech strategy of liberalization combined with reassurance seemed to be failing.

In July the Soviet Union demanded that a Warsaw Pact meeting be convened to discuss the Czech situation. The Czech leadership rejected the proposal and demanded the removal of Warsaw Pact troops from their soil. On 11 July Pravda intensified its attack on Czech reforms, drawing an explicit and ominous parallel with the 1956 Hungarian situation. The Warsaw Pact members concluded their meeting (without the Czechs) and on 18 July their "Warsaw letter" was published, demanding a "decisive rebuff" to anti-Communist forces associated with the Czech reforms. Figure 5 indicates deep hostility by both parties during this period.

A secret meeting was held beginning 29 July at Cierna, Czechoslovakia, between the highest Czech and Soviet leaders. After the talks Dubcek assured his country that the CCP would persist in its course and that the Soviet Union was satisfied that the CCP was defending Socialism. A public meeting, with much "ostensible" goodwill, was held at Bratislava on 3 August. It resulted in a communique in which both sides seemed satisfied. On that same day the Soviets announced that the last troops would leave Czechoslovakian soil. But by 14 August the Soviet press had resumed its intense criticism. The Czech press did not respond in kind. This discrepancy in behavior is readily seen in Figure 5. By the week ending 20 August the Soviet style turned down sharply while Czech style remained friendly. On 20 August at 11 p.m. Central European Time, Czechoslovakia was invaded by Soviet/Warsaw Pact troops.

Though one can gain an impression of the context from the above synopsis, it is not possible to say with any degree of confidence when the events were irreversibly set on a course toward hostility. Nor is it possible to infer from the context alone that the Soviets would invade Czechoslovakia. Undoubtedly the intelligence analyst would have classified information available that would add to what was known about these developments. But he would still need to determine whether Soviet troops would intervene.

The concern of this paper is to determine how the analyst might be helped by probability techniques. In the following sections, one of these techniques is examined and applied to a test case. As has been stated, the application is based on the hypothesis that normally the past, and especially the trend formed by the near-past and the present, will aid in predicting the future.

## Markov Chain Analysis

Our problem of predicting future behavior patterns from prior patterns may be expressed in terms of one of two models:

- (1) Prior behavior patterns predicting subsequent patterns.

That is:

$$P_i(t) \rightarrow P_j(t+1)$$

where:  $i = 1, 2, 3, 4,$   
 $j = 1, 2, 3, 4,$  or

- (2) Prior behavior states predicting subsequent behavior patterns:

$$S_i(t) \rightarrow P_j(t+1)$$

where:  $i = 1, \dots, 9$   
 $j = 1, 2, 3, 4,$

In either case, the problem can be handled as a single-stage Markov chain analysis. A Markov chain analysis represents the hypothesis that a particular outcome is not associated with a fixed probability but with a "conditional probability" based on a preceding state (Feller, 1950) (in our case a prior behavior state or pattern). It can be shown that the probability at any step within a Markov process depends only on an initial probability and the transition probability associated with the last state. This is usually summarized in a matrix of transition probabilities which gives the probabilities of moving from one state to another (or, in our case, from one pattern to another). The predictive analysis performed in a Markov chain process is based on manipulation of the transition matrix of probabilities.<sup>2</sup> One type of analysis used repeatedly in this study is that of

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<sup>2</sup> To agree to the outcome of the Markov chain analysis, it is essential to accept the assumption that the transition matrix remains constant throughout the prediction interval. At the behavior pattern level of analysis, patterns do not change as frequently as states. But, at the state level, it is of more serious concern because states tend to change more quickly.

computing the "steady-state" of the Markov process. The steady-state probability is the point at which the probability of moving from one state to another stabilizes.

WEIS data on international events were analyzed to discover recurring patterns of behavior among international dyads and to construct probability distributions of pattern and state changes. (We are assuming that these results are generalizable across dyads.) The basic data consisted of 126 dyads, including 658 separate occurrences of behavior states and 308 occurrences of behavior patterns. The time series data were partitioned into behavior states and behavior patterns to maximize unambiguous distinctions between them. The result of this partitioning was to require that the "time of existence" of the patterns be transformed to "equal average time of existence" intervals. This expediency allowed us to treat changes in the data initially as independent of time and later to convert the changes to specific time intervals.

Table 2 presents the approximate functional relationships, developed in the analysis of the WEIS data, that relate pattern changes to length of existence for different time intervals  $t$ . Put simply, the probability that a friendly or discrepant pattern will exist for " $t$ " time periods is approximately linear over the interval considered; hostility exists for a length proportional to the square root of the interval; and indifferent patterns exist for a time period proportional to the square of the interval. Thus the length that patterns exist over time is fairly uniform.<sup>3</sup>

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<sup>3</sup> This generalization across all dyads holds in the main. There are undoubtedly many idiosyncratic cases which do not follow precisely these functional lines. Why they do not and how to anticipate them will be the subject of further study.

TABLE 2

Approximate Cumulative Probability of One Pattern Shift

<u>PATTERN</u>	<u>CUM. PROB.</u>
Friendly	$t/n$
Hostile	$\sqrt{t}/n$
Indifferent	$t^2/n$
Discrepant	$t/n$

Table 3 is a transition matrix that shows the probabilities of moving from one pattern to another over a 7-year period as expressed in the WEIS data. The time distributions in Table 2 may be used to transform this matrix into any appropriate shorter time period. (In a later analysis we will illustrate how this is done.) Table 3 shows that, in general, the probability of moving to a friendly pattern is somewhat higher than that of moving to a hostile one.

TABLE 3

Pattern-to-Pattern Transition Matrix  
(no controls, entire data base, total time)

		$P_{n+1}$			
		F	H	I	D
$P_n$	F	--	.29	.34	.37
	H	.34	--	.36	.30
	I	.53	.33	--	.14
	D	.58	.39	.03	--

Table 4 gives the conditional probability of a pattern change within the WEIS data given specific states. The assumption implicit in constructing these tables--as is true with all the transition matrices--is that there is a significant change in the probability of occurrence of a particular pattern given a particular state; that is, the transition probabilities form the first-order Markov chain.

TABLE 4  
The Conditional Probability of Moving from  
Pattern "i" to Pattern "j" Given State "k"  
(no controls, two weeks)

	$P_{n+1}$		$S_1$	
	F	H	I	D
$P_n$	F	.92	--	.04 .04
	H	.72	--	.04 .26
	I	.83	--	.09 .08
	D	.72	--	.12 .16

	$P_{n+1}$		$S_2$	
	F	H	I	D
$P_n$	F	.02	.63	.17 .18
	H	--	--	-- --
	I	.05	.22	.28 --
	D	--	.83	.05 .15

	$P_{n+1}$		$S_3$	
	F	H	I	D
$P_n$	F	--	--	-- --
	H	--	.92	.02 .06
	I	--	.81	.06 .13
	D	--	.86	.09 .05

	$P_{n+1}$		$S_4$	
	F	H	I	D
$P_n$	F	.62	.06	.02 .30
	H	.04	.24	.10 .62
	I	.31	.06	.11 .52
	D	.52	.08	.06 .34

	$P_{n+1}$		$S_5$	
	F	H	I	D
$P_n$	F	.21	.09	.09 .61
	H	.16	.16	.03 .61
	I	.10	.02	-- .88
	D	.11	.61	.06 .22

	$P_{n+1}$		$S_6$	
	F	H	I	D
$P_n$	F	.50	--	.19 .31
	H	.11	.61	.11 .17
	I	.25	.22	.25 .23
	D	.19	.19	.08 .44

TABLE 4 (Cont.)

$P_{n+1}$					$S_7$				
					F	H	I	D	
$P_n$	F	.30	.10	.40	.20				
	H	.21	.10	.61	.08				
	I	.10	.12	.57	.21				
	D	--	--	--	--				

$P_{n+1}$					$S_8$				
					F	H	I	D	
$P_n$	F	.10	.02	.02	.86				
	H	.02	.12	.04	.82				
	I	.04	.03	.02	.21				
	D	.04	.73	.02	.21				

	$P_{n+1}$		$S_9$	
	F	H	I	D
F	.80	.02	.12	.16
H	.03	.90	.01	.06
$P_n$ I	.21	.27	.31	.21
D	.10	.20	.10	.60

When the dyads within the WEIS data are controlled for belligerency, the transition matrix becomes that of Table 5. By controlling for belligerency we mean that our transition matrix was generated from data on hostile dyads only. The propensity toward hostility is significantly greater. Likewise the propensity toward friendliness is significantly less. Thus Table 5 suggests that it is meaningful to ask if there is a prior history of hostility between two nations within a dyad when consideration is being given to the likelihood of changes in behavior.

TABLE 5

Pattern-to-Pattern Transition Matrix  
(controlling for belligerency, total time)

		$P_{n+1}$			
		F	H	I	D
$P_n$	F	--	.29	.34	.37
	H	.003	--	.54	.46
	I	.48	.39	--	.13
	D	.26	.73	.01	--

#### The Data for the Czech Crisis

The events for the Soviet-Czech case were coded from the FBIS for the Soviet Union and East Europe.<sup>4</sup> Figures 5 and 6 represent the result of this coding. The style plot is based on 888 events occurring over an 8-month period (2 January 1968 through 20 August 1968). Six pattern changes and 22 state changes occurred during this period.

The first pattern was friendly and lasted from 2 January through the week ending 16 April. It contained 13 state changes. A shift to a discrepant pattern occurred during the week ending 23 April. It contained two state changes and lasted about one month. A brief pattern of mild hostility followed but quickly reverted to another short, friendly pattern that lasted another month. The friendly pattern was followed by a discrepant one in which the Czechs acted negatively while the Soviets remained positive. This pattern reversed after a week as the Soviets began to interact negatively while the Czechs reacted positively. The discrepant pattern was followed by a rather sustained hostile pattern. The data ended with a discrepant pattern beginning the week of 7-13 August. Soviet intervention began the night of 20 August.

<sup>4</sup> The authors wish to acknowledge the work of Larry German and Aaron Greenberg in coding the FBIS.

## Constructing Pattern Transition Matrices for the Czech Crisis

Figures 5 and 6 represent the data upon which the analysis must be based prior to the Czech crisis. The historical findings from the WEIS analysis will be used only in situations where there is no other available information.

Given no information on pattern transitions, one can assume that the chances of moving from one pattern to another are equally likely. Such an assumption results in an initial matrix identical to the one in Table 6.

TABLE 6

		P <sub>n+1</sub>			
		F	H	I	D
P <sub>n</sub>	F	--	.33	.33	.33
	H	.33	--	.33	.33
	I	.33	.33	--	.33
	D	.33	.33	.33	--

We may incorporate new information into the initial matrix by simply treating recent pattern changes as relative frequencies across patterns. This results in an "updated" initial matrix each time a pattern change occurs. The relative frequencies are treated as probability distributions and are simply added to the rows of the matrix. The rows are normalized to yield a modified transition matrix.

Once the transition matrix is updated with the latest pattern changes, it can then be transformed to an appropriate time interval (t). This is done by simply using the time distributions for the probability of at least one pattern change in t time periods taken from the WEIS analysis and multiplying it by the modified transition matrix. Functionally we have:

$$C(t) * [T_{Old}] = T_{New}$$

\* C(t) is the scalar matrix of the probabilities associated with each pattern type.

Stated verbally: the probability of at least one pattern change in a time interval of  $t$  is equal to the product of the probability of a change times the probability of at least one pattern change within  $t$ .

For example, on 23 April (immediately after the first pattern change) the modified matrix becomes:

TABLE 7

		$P_{n+1}$			
		F	H	I	D
$P_n$	F	--	.17	.17	.67
	H	.33	--	.33	.33
	I	.33	.33	--	.33
	D	.33	.33	.33	--

The weekly transition matrix becomes:

TABLE 8

		$P_{n+1}$			
		F	H	I	D*
$P_n$	F	.94	.01	.01	.04
	H	.02	.94	.02	.02
	I	.02	.02	.94	.02
	D	.02	.02	.02	.94

Transition matrices for time units of any arbitrary length may be constructed in the manner just demonstrated. Once the transition matrix is computed, a Markov analysis may be performed. The transition matrices for each prediction period are reported in Appendix A.

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\* Multiplying by the matrix of constants and placing the complement of the sums of each row in the diagonals. The correct interpretation of the number along the diagonal is that it is "the probability of remaining in a given pattern."

### Selecting Prediction Points in the Czech Crisis

During the first three months of 1968 the interaction between the Soviets and the Czechs was relatively parallel and positive. (See Figure 5.) The first point at which Soviet-Czech interaction began to take on a qualitatively different character was 23 April, when it changed from a friendly to a discrepant pattern. The point marking this change might be a suitable point from which to estimate the future.

The results of a steady-state Markov projection at this point are shown in Table 9 and Figure 7. The prediction is carried out by computing a 2-week transition matrix and incorporating into it all prior information on pattern changes up to 23 April. The matrix is then manipulated<sup>5</sup> to produce steady-state probabilities of change from a given pattern to a subsequent one.

In the analysis, the transition matrix was manipulated to produce individual 2-week projections. The results show that a discrepant pattern is likely to dominate for about 9 weeks, after which a hostile pattern is slightly more likely to develop. In reality, as can be seen from Figure 5, a hostile pattern did develop 4 weeks later. At that point in time our analysis showed a 16 percent chance of a hostile pattern developing and a 62 percent chance

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<sup>5</sup> The actual analysis performed in computing the steady-state probability of a Markov process is that of computing a steady-state probability vector  $P(n)$  which has the property

$$P(n) = P(n-1)P \text{ or } P(n) = P(n)P = t$$

The probability vector  $t$  is called the fixed point of the transformation;  $t$  can be derived by taking successive powers of  $P$  (the transition matrix), i.e.,

$$\lim_{n \rightarrow \infty} P^n = t$$

Thus the process of computing the steady-state is referred to as "convoluting" the transition matrix. For a thorough explanation, see Richmond (1968) Chapter 8. Also for an entertaining application of Markov processes, see Springer, et al. (1968) Chapter 3. For Markov application to the social sciences see, among others, Lazarsfeld and Henry (1966) Section 3; Coombs, Dawes and Tversky (1970) Chapter 8. For studies in international relations applications, see Wilkenfeld (1973) and Zinnes (1973). For a useful introductory discussion and applied use of Markov chain approaches, see Harrary and Lipstein (1962).

TABLE 9

Steady-State Probability Predictions from 23 April 1968

Weeks out from 23 April	Probability of Pattern Occurrence			
	F	H	I	D
1 week	.04	.04	.04	.89
2 weeks	.07	.08	.07	.78
4 weeks	.15	.16	.07	.62
6 weeks	.21	.24	.09	.45
8 weeks	.23	.29	.11	.36
10 weeks	.24	.34	.12	.31
12 weeks	.22	.38	.11	.29
16 weeks	.14	.42	.08	.36

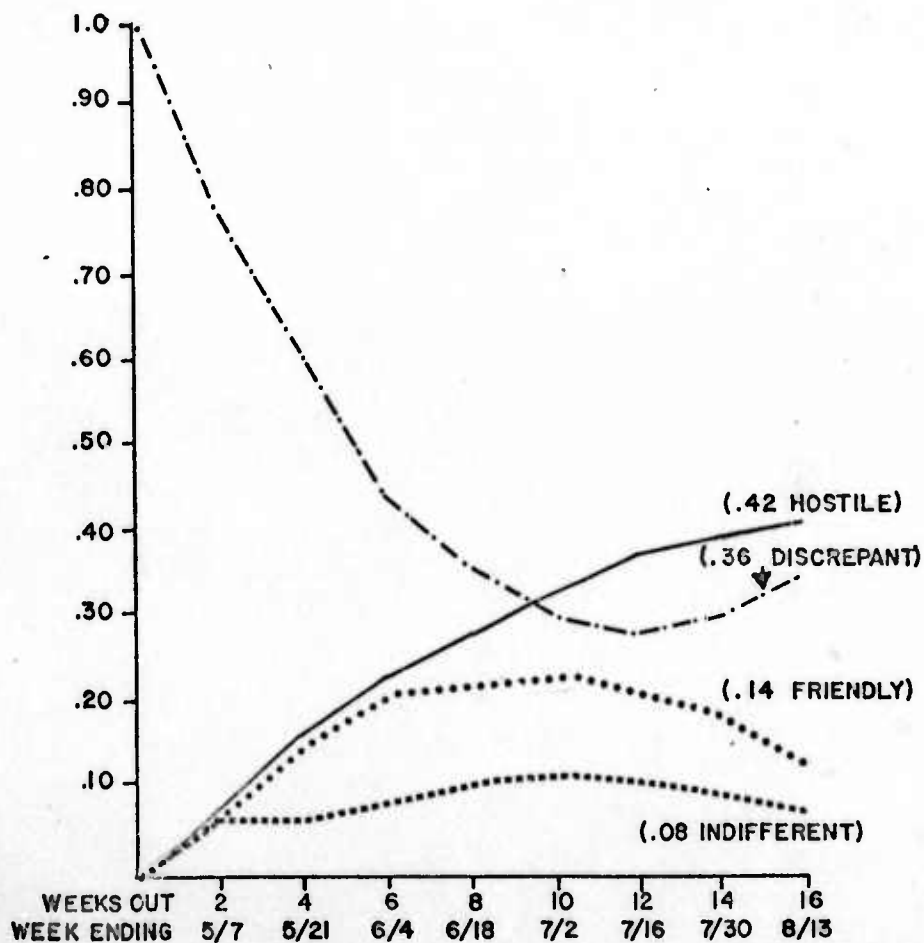


Figure 7. Steady-state Probabilities for Behavior Patterns from 23 April to 13 August 1968.

of no pattern change occurring. As might be expected, with any prediction system, the steady-state probabilities do not yield exact predictions of the time of occurrence of a pattern change. They yield probabilities of the general trend of the changes based on the dynamics of the historical data. They tap the dynamics of the system. Having said this, it is necessary to emphasize that the Markov analysis suggests a probable impending dominance of interactions by hostile and discrepant behavior. This points to a rapidly deteriorating discrepant pattern (note the slope of the lines) and a rapidly developing hostile pattern.

The assumption of this analysis is that some points in time are more interesting or unusual than others and consequently will catch the analyst's attention. A periodic monitoring of behavior may not be nearly as useful as one based on watching for signals of changes in behavior. A second time point, 28 May, was selected for prediction since it corresponds to the date of the first signs of a change in the status of the interaction. Table 10 and Figure 8 give the results of the Markov analysis projected 20 weeks out from this date. The results show a sustained hostile pattern of behavior. The discrepant and friendly probabilities, while close to the hostile ones at first, steadily decline after the 2-week point. In reality there was a change to a friendly pattern.

By 28 May the interaction pattern had moved into the friendly zone and remained there until the week ending 25 June. During late June and early July, Warsaw Pact troops held maneuvers in Czechoslovakia. Table 11 and Figure 9 provide steady-state predictions from 25 June--the beginning of the new discrepant pattern. They show a decline in discrepancy accompanied by a rise in hostility. The probabilities cross, with hostility becoming dominant by the eighth week. The real data show that a hostile pattern actually succeeded the 25 June discrepant pattern 3 weeks later.

By 16 July (the beginning of the hostile pattern) the politics of Czech reforms were operating in full force as were Soviet criticisms and defensive reactions. A low point in hostile behavior occurred around 23 July, reflecting a hardening of attitudes. Warsaw Pact members had just concluded their meeting without

TABLE 10  
Steady-State Probability Predictions from 28 May 1968

Weeks out from 28 May	Probability of Pattern Occurrence			
	F	H	I	D
1 week	.32	.32	.02	.32
2 weeks	.31	.33	.05	.31
4 weeks	.28	.36	.05	.31
6 weeks	.26	.40	.05	.30
8 weeks	.24	.44	.06	.25
10 weeks	.22	.46	.08	.24
12 weeks	.20	.49	.08	.22
14 weeks	.18	.53	.10	.19
16 weeks	.18	.53	.10	.19
18 weeks	.17	.56	.10	.17
20 weeks	.16	.57	.10	.15

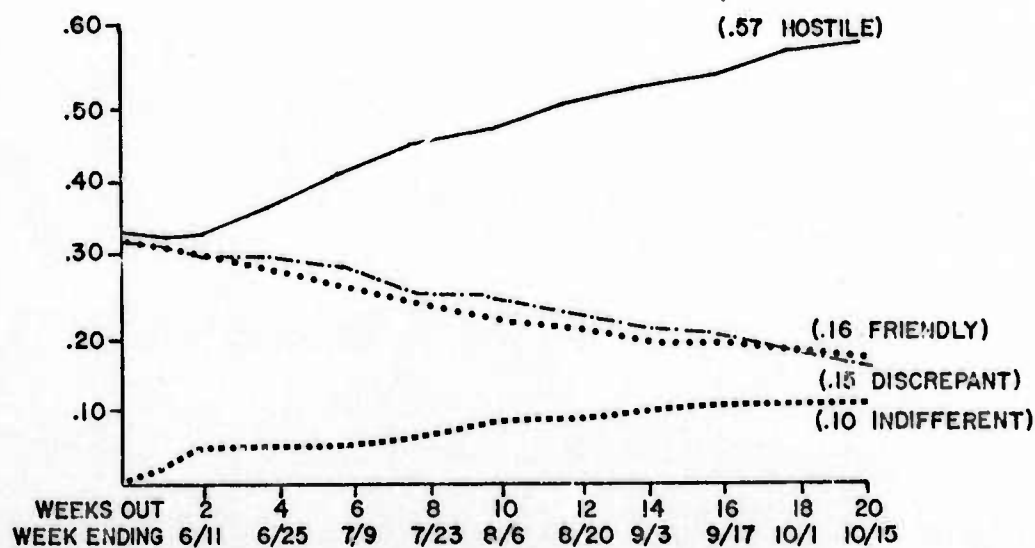


Figure 8. Steady-state Probabilities for Behavior Patterns from 28 May to 15 October 1968.

TABLE 11  
Steady-State Probability Predictions from 25 June 1968

Weeks out from 25 June	Probability of Pattern Occurrence			
	F	H	I	D
1 week	.25	.25	.02	.48
2 weeks	.25	.26	.04	.45
4 weeks	.23	.31	.05	.41
6 weeks	.24	.33	.05	.38
8 weeks	.23	.38	.06	.33
10 weeks	.22	.40	.07	.30
12 weeks	.21	.44	.08	.27
14 weeks	.20	.46	.09	.23
16 weeks	.19	.49	.09	.23
18 weeks	.18	.50	.10	.21
20 weeks	.17	.53	.10	.20

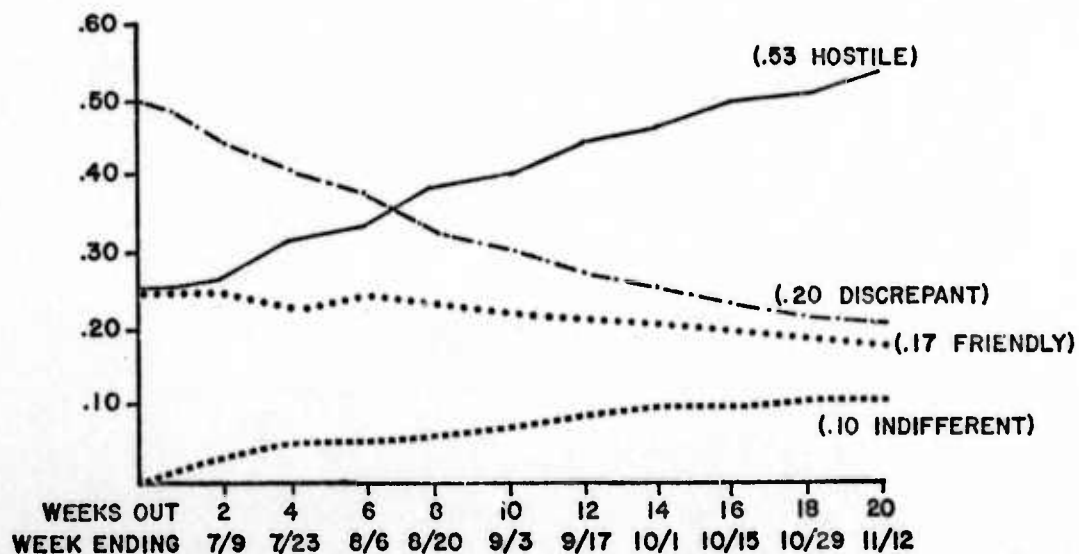


Figure 9. Steady-state Probabilities for Behavior Patterns from 25 June to 12 November 1968.

the Czechs and issued the "Warsaw Letter" demanding a "decisive rebuff" to anti-Communist forces it associated with Czech reforms (see p. 13). The results of the Markov analysis (projected out 20 weeks from this point) are given in Table 12 and Figure 10. They suggest, almost from the very beginning, a complete dominance by a pattern of hostility.

The final pattern change prior to the Czech invasion occurred by 13 August. During this period the Soviets had begun renewed attacks on Czech liberalization policies. The Czechs had ceased to react in kind. The Markov analysis from this point, while showing an early dominance by the discrepant pattern, predicts an ever-rising probability of hostility after the sixth week (see Table 13 and Figure 11). The Soviet invasion began on the night of August 20th, suggesting that a hostile pattern actually occurred within 2 weeks after the prediction point.

#### Summary

Table 14 compares the actual outcomes with those predicted by Markov analysis. From the table we can see that:

1. The actual patterns and those predicted most likely are not the same at the date when pattern changes occurred (see Figure 5).
2. The second most likely predicted patterns agree exactly with the next pattern that actually occurred.
3. The general direction of all the predictions is toward hostility. Even in the early weeks when other patterns such as discrepant were predicted as most likely, the trend is toward dominance of hostility throughout.

These findings reinforce our earlier point: the analysis yields probabilities that tap the dynamics of the system.

TABLE 12

Steady-State Probability Predictions from 23 July 1968

Weeks out from 23 July	Probability of Pattern Occurrence			
	F	H	I	D
1 week	.20	.40	.02	.38
2 weeks	.20	.41	.03	.36
4 weeks	.20	.41	.04	.35
6 weeks	.20	.45	.04	.32
8 weeks	.20	.46	.05	.29
10 weeks	.19	.49	.05	.27
12 weeks	.18	.52	.06	.24
14 weeks	.18	.52	.07	.21
16 weeks	.17	.54	.07	.21
18 weeks	.16	.56	.08	.19
20 weeks	.16	.59	.08	.18

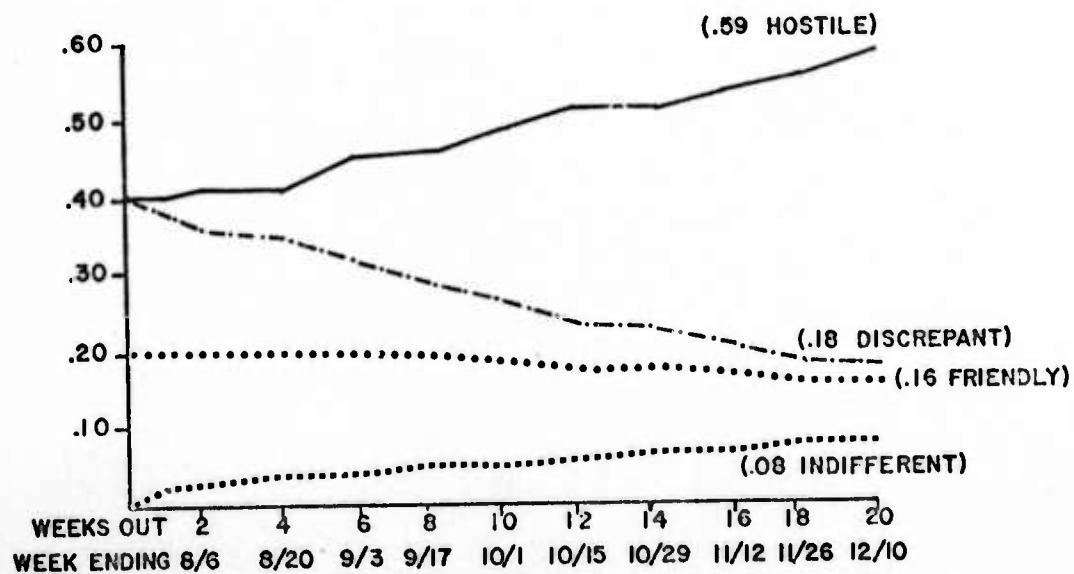


Figure 10. Steady-state Probabilities for Behavior Patterns from 23 July to 10 December 1968.

TABLE 13  
Steady-State Probability Predictions from 13 August 1968

Weeks out from 13 August	Probability of Pattern Occurrence			
	F	H	I	D
1 week	.17	.33	.02	.47
2 weeks	.18	.33	.03	.46
4 weeks	.17	.37	.04	.42
6 weeks	.18	.40	.04	.38
8 weeks	.18	.43	.04	.35
10 weeks	.18	.44	.06	.32
12 weeks	.18	.47	.06	.29
14 weeks	.18	.48	.07	.24
16 weeks	.17	.51	.07	.24
18 weeks	.17	.53	.08	.23
20 weeks	.16	.55	.08	.20

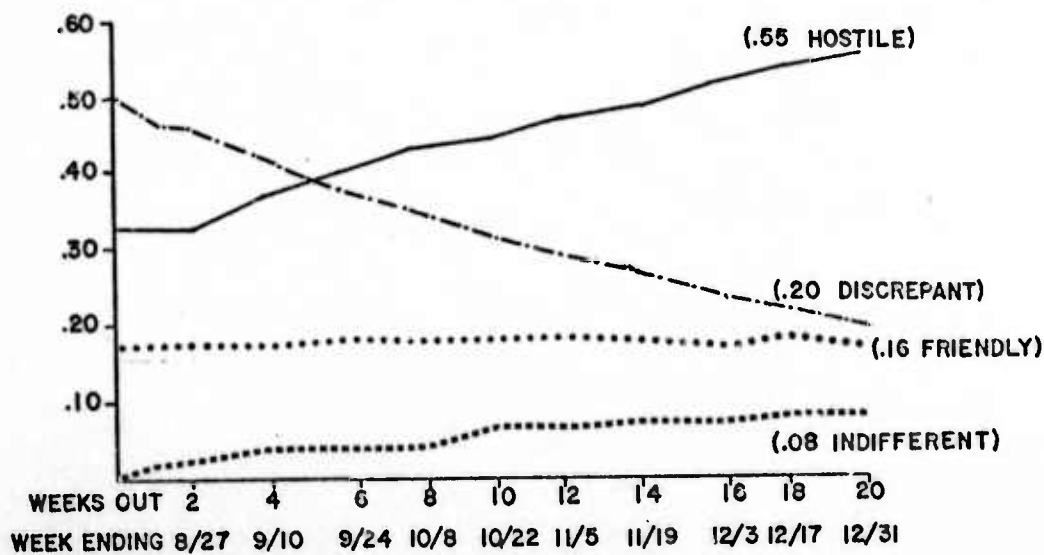


Figure 11. Steady-state Probabilities for Behavior Patterns from 13 August to 31 December 1968.

TABLE 14

Patterns	Prediction Date				
	4/23	5/28	6/25	7/23	8/13
Next Actual	H	D	H	D	H*
Predicted Most Likely	D	H	D	H	D
Predicted 2nd Most Likely	H	D	H	D	H
At Week	4	4	3	3	2
Direction Predicted	H	H	H	H	H
By Week	10	2	8	2	6

\* Invasion (night/morning of 20-21 August).

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## MARKOV PREDICTIONS USING PRIOR STATES

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The results of predictions using model I--prior patterns predicting subsequent patterns--were encouraging in predicting general directions. The second part of this analysis will involve a similar set of predictions using model II--prior states predicting subsequent patterns. The strength of this analysis will rely heavily on the prior WEIS analysis in which conditional probability distributions were constructed relating pattern changes to prior states. The conditional probability distributions were constructed by observing the kind and number of patterns succeeding a given state. The relative frequencies of these occurrences constitute the probability distributions.<sup>6</sup>

In Figure 6, separate occurrences of states in Czech-Soviet relations are given. The states associated with the dates of interest are listed in Table 15.

TABLE 15

Prediction Date	State	Pattern Transition
April 23	S <sub>8</sub> :	F→D
May 28	S <sub>1</sub> :	H→F
June 25	S <sub>8</sub> :	F→D
July 16	S <sub>8</sub> :	D→H
August 13	S <sub>4</sub> :	H→D

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<sup>6</sup> The sample space of states preceding patterns was much smaller than the general occurrence of states or the occurrence of patterns succeeding patterns. The effect of small samples is to yield grossly skewed probability distributions. These effects are not completely controlled for in this phase of the projections.

We want to determine whether model II serves as a better predictor of pattern changes than model I. Intuitively we would guess this to be the case. We know that states change more rapidly than patterns and consequently we expect the updated transition matrix to reflect more recent changes in behavior. Thus the later the information, the more accurate the predictions.

Figure 12 gives the result of the steady-state prediction from 23 April. The prior data reveal a change from a friendly pattern given a prior state of "increasingly discrepant behavior" ( $S_8$ ). The steady-state predicts a change to a discrepant pattern. The actual data do in fact show a change to a discrepant pattern. The steady-state is reached immediately with a probability of .90. The probability of other patterns developing is very low.

Output from the 28 May analysis shown in Figure 13 predicts a friendly pattern. The process stabilizes after 6 weeks. The real data show that a friendly pattern did in fact develop. The probability of non-friendly patterns developing declines rapidly after 4 weeks. The real data do not bear out these longer term projections.

The projections for 25 June are virtually identical to those of 23 April in Figure 12. The analysis predicts a 90 percent chance of a discrepant pattern developing within 2 weeks. The data show this to be the case. As before, the steady-state probability remains constant throughout the prediction interval.

Figure 14 yields predictions from 16 July. The steady-state distribution here differs characteristically from the previous predictions. The results show a pair of oscillating distributions which slacken and stabilize after 16 weeks. The distributions predict a higher probability of hostility after 1 to 2 weeks, an even chance of hostility & discrepancy 3 weeks later, and a higher probability of discrepancy after 4 weeks. Discrepancy appears to maintain a clear dominance after 7 weeks. The analysis correctly predicts an immediate change to hostility. The oscillation between hostility and discrepancy does not occur in the real data. A discrepant pattern does develop 3 weeks later as the analysis suggests.

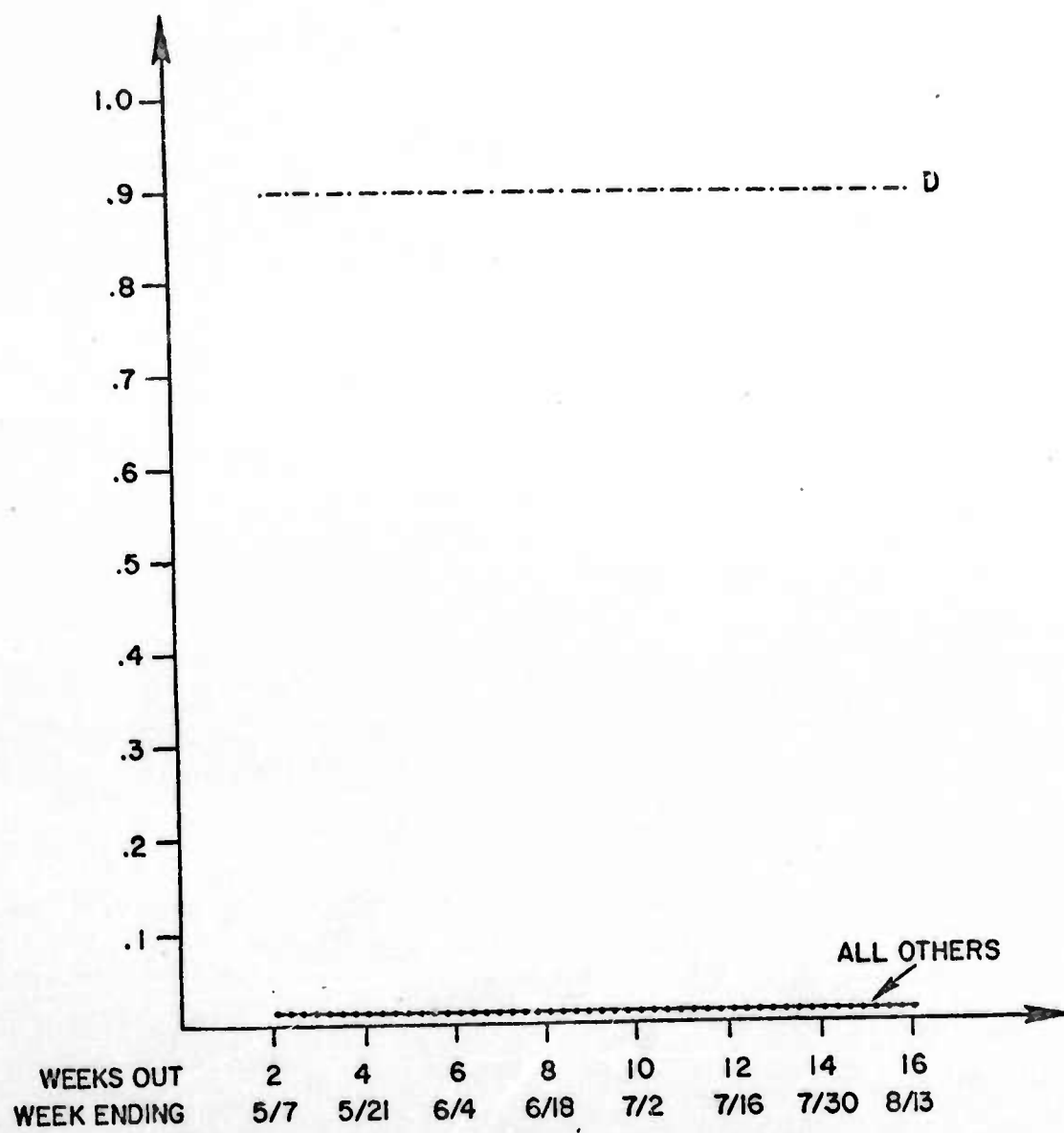


Figure 12. Steady-state Probability Predictions from 23 April 1968 with State Information.

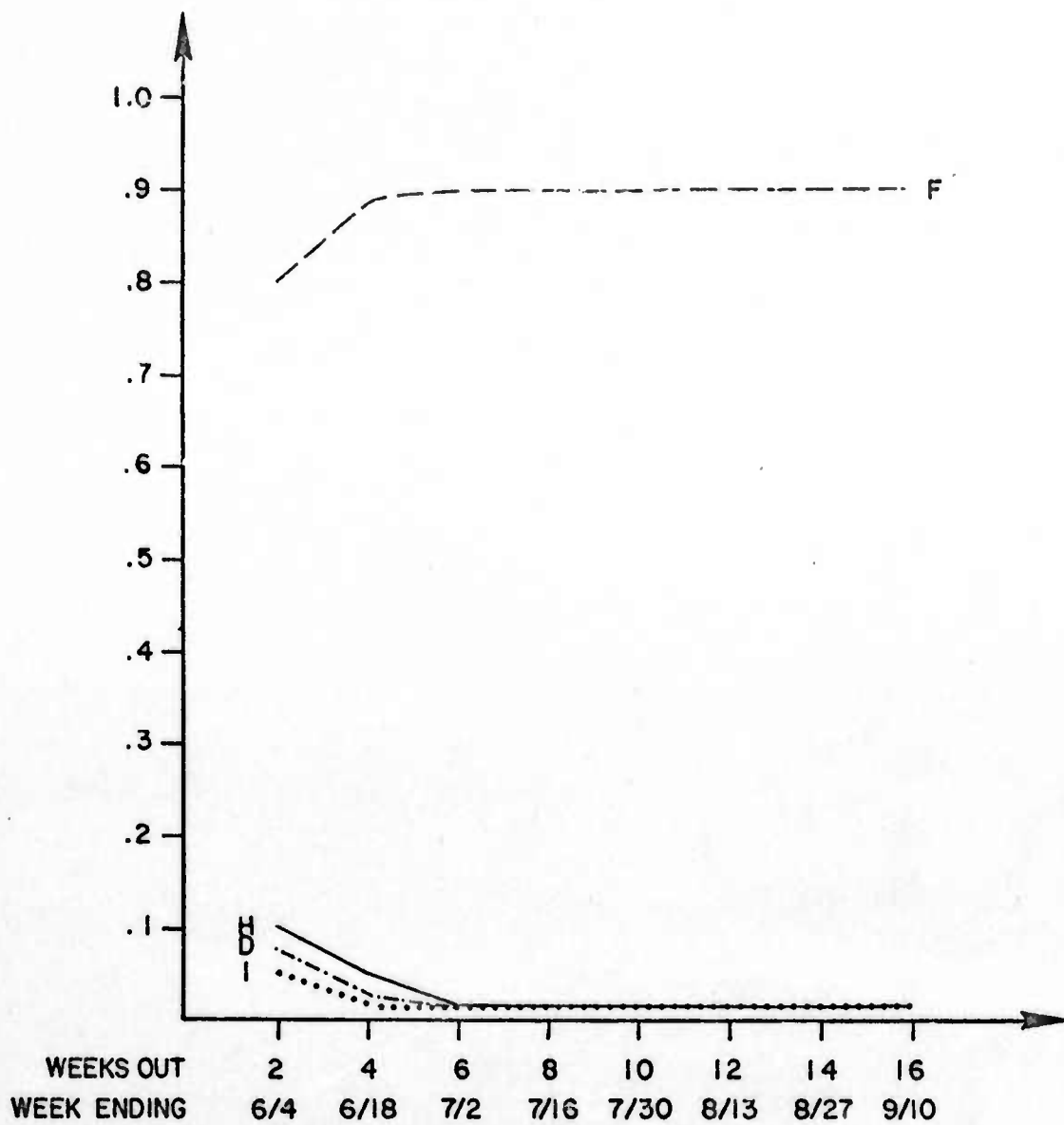


Figure 13. Steady-state Probability Predictions from 23 May 1968 with State Information.

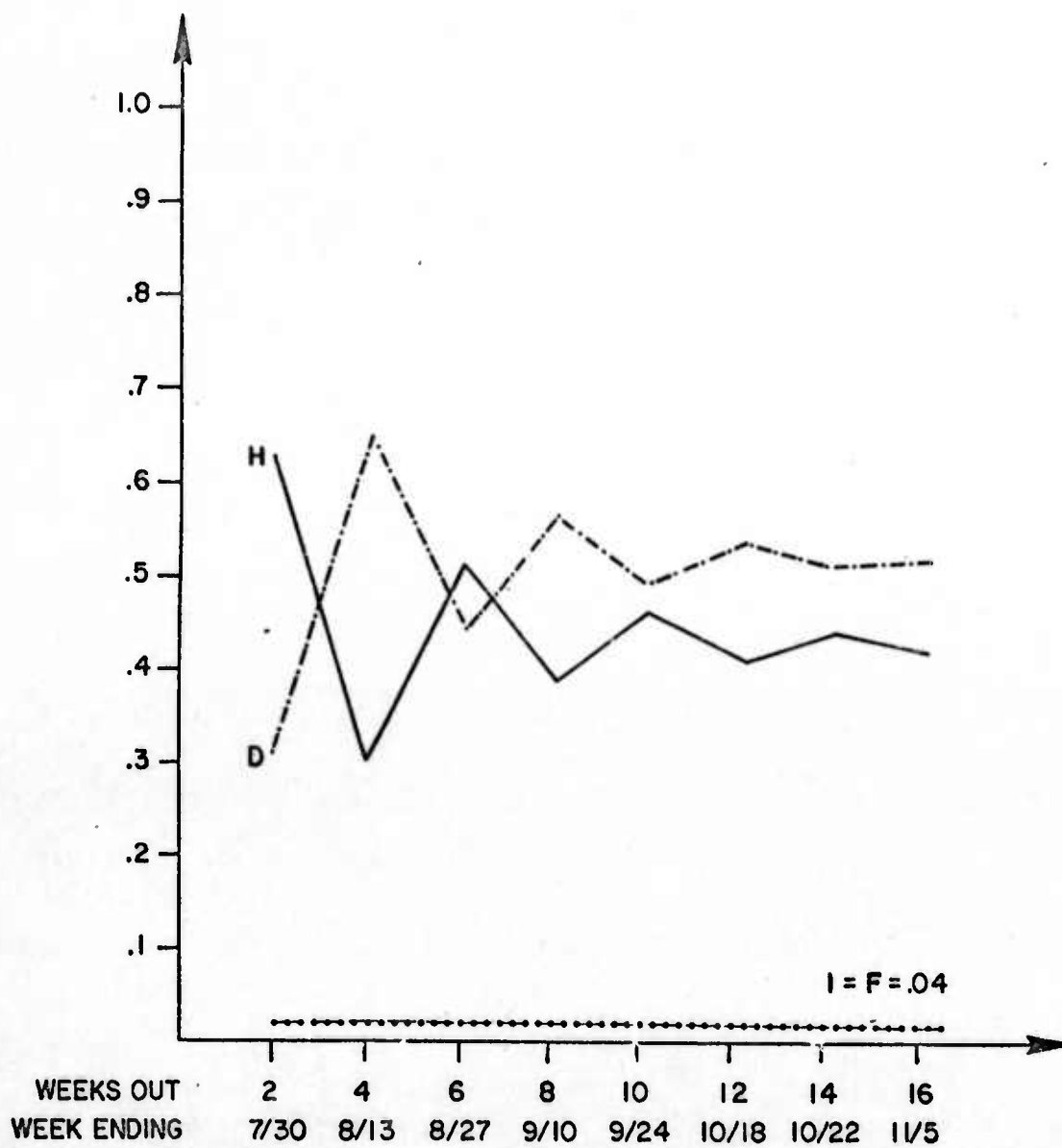


Figure 14. Steady-state Probability Predictions from 16 July 1968 with State Information.

Finally, Figure 15 yields predictions from 13 August. It shows a dominance of hostile and discrepant patterns. The probability of a discrepant pattern occurring is slightly greater than hostility during the second week. This changes within a week, with hostility assuming a dominance throughout the remaining prediction period. Again, the steady-state predictions stabilize rather quickly with hostility clearly dominating. The actual data show a discrepant pattern lasting 1 week. The pattern changed to hostile within 2 weeks (after 20 August) because of the invasion.

### Summary

The additional information provided by behavior states improves the accuracy of pattern prediction significantly. In the cases covered, only one prediction was incorrect. Table 16 summarizes these findings.

TABLE 16

Prediction Period	1	2	3	4	5
Actual	D	F	D	H	H
Predicted	D	F	D	H	D

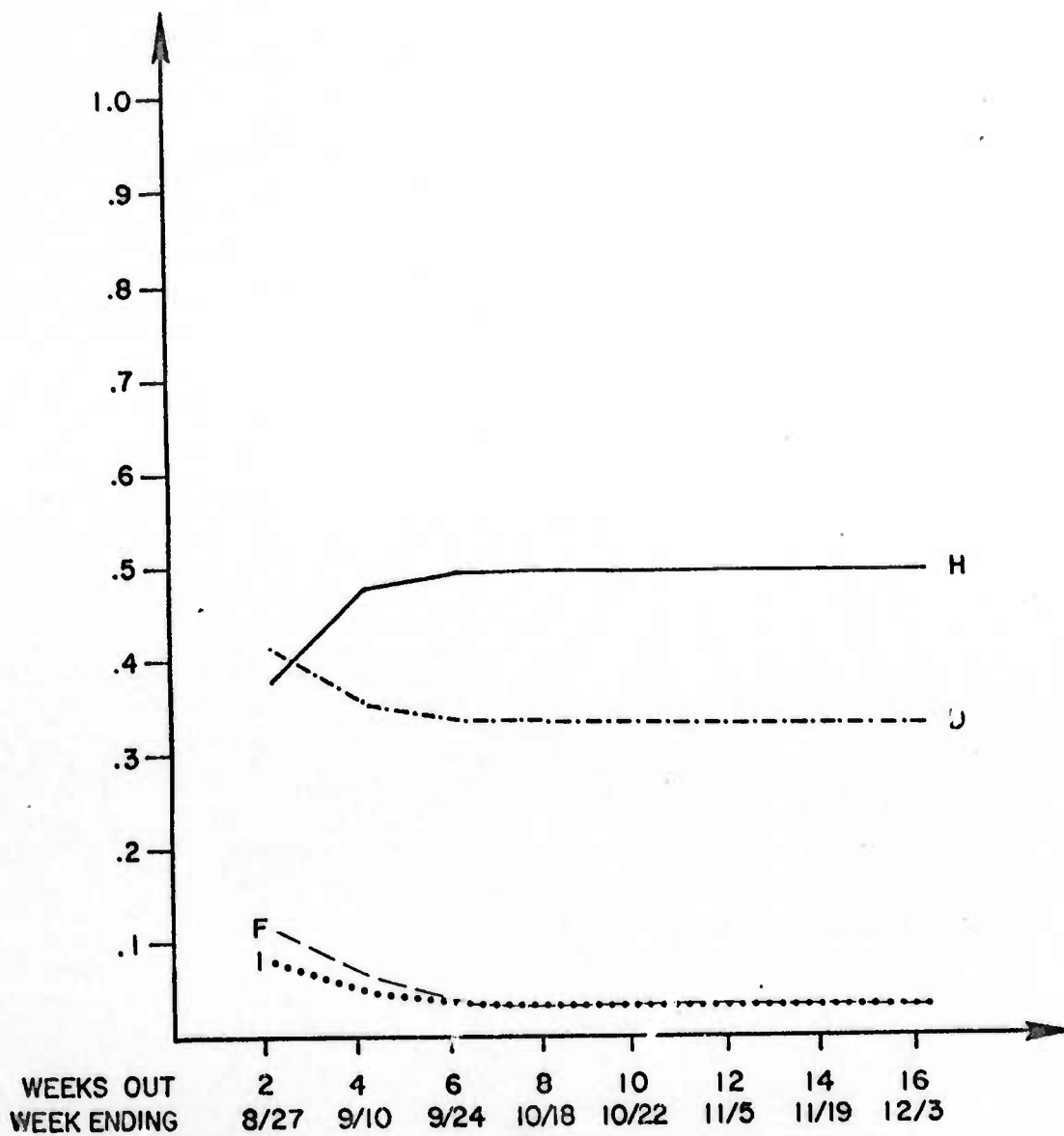


Figure 15. Steady-state Probability Predictions from 13 August 1968 with State Information.

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## SOME CONCLUDING OBSERVATIONS

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Several specific observations can be made:

1. Markov analysis does predict a hostile pattern probability for 21-27 August, the week of the Soviet invasion of Czechoslovakia. This is consistently predicted from most time points.
2. The model consistently predicts that relations will tend toward the hostile or discrepant patterns. At most time points, the probabilities stable out with the hostile pattern predominant at the end of the forecasting period.
3. The analysis can usefully evaluate the stability of particular patterns: How long will a particular pattern last? Will it be succeeded by another? Which pattern will it be?
4. The predicted shifts generally do not account for all the shifts that actually occur between the point at which the prediction is made and the end of the period. For example, at the 23 July prediction point, the model predicts a hostile pattern for the entire period. In reality, there was a shift to another discrepant pattern. The analysis yields a prediction about the general trend of Czech-Soviet relations rather than an exact outline of pattern successions over time.

We should add here that if we consider both the most probable and the second most probable predicted patterns as acceptable predictions, the model does tell us what to expect with a relatively high degree of accuracy. In the predictions from two time points, the model predicts a hostile pattern as most probable and a discrepant pattern as the second most probable when only pattern data are used. Although at times those patterns were predicted as equally likely, the shifts that occurred from those points to the end of

the period actually fluctuated between discrepant and hostile patterns. Thus, one of the two most likely patterns predicted actually did occur. The model yields at least a general idea of future conditions.

5. Estimates were improved by using information about behavior states to predict behavior patterns.

6. Markov analysis may predict shifts in patterns but may not always predict them at the time they actually occur. The predictions are "out of phase" with actual shifts. For example, at the week ending 25 June, the model predicts a shift from discrepant to hostile behavior by the eighth week (Figure 9). In reality, the shift occurred 3 weeks after 25 June.

7. The "out of phase" problem may point to a more important consideration. The model fails to make accurate "point predictions" (predicting a shift to a particular pattern at a particular point in time); yet it does predict the correct pattern change. Thus it is sensitive to the dynamic character of the behavior.

Kanter and Thorson (1972) suggest that understanding the dynamics of behavior (the structure of patterns of interaction) may be as important in assessing the consequences of changes in actions as predicting accuracy at points in time. They suggest that choosing the theory (or prediction) with the smallest error (in the least squares sense) is not always the best policy. To illustrate their point consider Figure 17. In this figure, let us assume that the solid line represents reality and the dotted lines represent alternative theories or predictions. Theory 1 is clearly better in the least squares sense; yet theory 2 captures the dynamics of the process better and thus is to be preferred over theory 1.

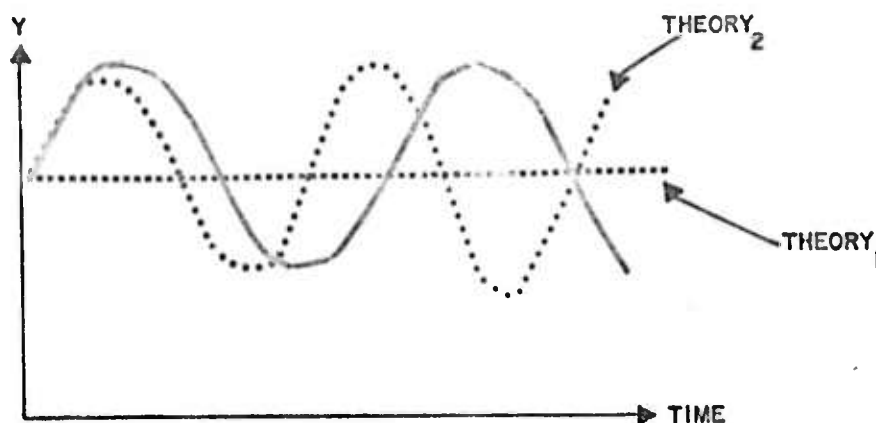


Figure 17

In summary we might point out that Markov predictions do capture the essential dynamics and characteristics of international interaction as they are reflected in recurring sequences of patterns and states. As such, they provide the analyst with a reference point from which expectations may be anchored. Our predictions show unequivocally that Soviet-Czech relations were destined to worsen during the 20 August time frame. In addition, they yield a probabilistic index of the likelihood of such conditions. The prediction is not as absolute as it would be in the "point prediction" sense. However, it does reflect the dynamics of the behavioral process.

# BIBLIOGRAPHY

- COOMBS, C.G., R.M. DAWES and A. TVERSKY (1970) Mathematical Psychology: An Elementary Introduction. Englewood Cliffs, New Jersey: Prentice-Hall, Inc.
- FELLER, W. (1950) An Introduction to Probability Theory and Its Applications. New York: John Wiley & Sons, Inc.
- HARRARY, F. and B. LIPSTEIN (1962) "The Dynamics of Brand Loyalty: A Markovian Approach." Operations Research 10 (January-February): 19-40.
- KANTOR, A. and S.J. THORSON (1972) "The Weapons Procurement Process: Choosing Among Competing Theories." Public Policy XX (Fall): 479-524.
- KELLY, C.W. III (1972) "The Fate of Probabilities in a World of Prose." Paper presented at the Summer Conference, San Diego, California.
- LASSWELL, H.D., N. LUTES, and Associates (1965) Language of Politics: Studies in Quantitative Semantics. (revised edition) Cambridge, Mass.: The MIT Press.
- LAZARSFELD, P.F. and N.W. HENRY (1966) Readings in Mathematical Social Science. Mass: MIT Press. 148.
- MCCLELLAND, C.A. (1967) "Event-Interaction Analysis in the Setting of Quantitative International Relations Research." University of Southern California, February.
- RICHMOND, S. (1968) Operations Research for Management. New York: The Ronald Press Company.
- RUBIN, T. (1970) "Development Status of Environmental Information Systems," Final Research Report. Arlington, Va.: CACI, Inc.
- SPRINGER, C.H. (1968) Probabilistic Models Volume 4 of the Mathematics for Management Series. Homewood, Ill: Richard D. Irwin, Inc.
- WILKENFELD, J. [ed.] (1973) Conflict Behavior and Linkage Politics. New York: McKay Publishing Co.
- ZINNES, D. (1973) "Markovian Analysis of Hostility in Pre-World War I Diplomatic Communications." University of Indiana. (mimeo)
- ZLOTNICK, J. (1970) "Bayes Theorem for Intelligence Analysis." Paper presented at the Conference on the Diagnostic Process, Ann Arbor, Michigan, June.

APPENDIX A

Prediction Point: 23 April 1968

<u>Weeks Out</u>	<u>Cum. Prob. of Pattern Shifts</u>		<u>Initial Transi- tion Matrix<sup>1</sup> (ITM)</u>		<u>Full Transi- tion Matrix</u>
					F H I D
Week 1	.06				F .94 .01 .01 .04
	.06				H .02 .94 .02 .02
	.06	X	ITM	=	I .02 .02 .94 .02
	.06				D .02 .02 .02 .94
Week 2	.13				F .87 .02 .02 .09
	.09				H .03 .91 .03 .03
	.25	X	ITM	=	I .08 .08 .76 .08
	.13				D .04 .04 .04 .88
Week 4	.25				F .75 .04 .04 .17
	.13				I .04 .88 .04 .04
	1.00	X	ITM	=	H .33 .33 .00 .33
	.05				D .08 .08 .08 .76
Week 6	.38				F .65 .06 .06 .23
	.15				H .05 .85 .05 .05
	1.00	X	ITM	=	I .33 .33 .00 .33
	.38				D .13 .13 .13 .61
Week 8	.50				F .48 .09 .09 .34
	.18				H .06 .82 .06 .06
	1.00	X	ITM		I .33 .33 .00 .33
	.50				D .17 .17 .17 .49

---

<sup>1</sup> Initial Transition Matrix =	F	H	I	D
F		.17	.17	.67
H	.33		.33	.33
I	.33	.33		.33
D	.33	.33	.33	

Prediction Point: 23 April 1968 (Con't)

<u>Weeks Out</u>	<u>Cum. Prob. of Pattern Shifts</u>		<u>Initial Transi- tion Matrix (ITM)</u>		<u>Full Transi- tion Matrix</u>
					F    H    I    D
Week 10	.63			F	.36 .11 .11 .42
	.20			H	.07 .79 .07 .07
	1.00	X	ITM	= I	.33 .33 .00 .33
	.06			D	.21 .21 .21 .37
					F    H    I    D
Week 12	.75			F	.24 .13 .13 .50
	.22			H	.07 .79 .07 .07
	1.00	X	ITM	= I	.33 .33 .00 .33
	.75			D	.25 .25 .25 .25
					F    H    I    D
Week 14	.88			F	.11 .15 .15 .59
	.23			H	.08 .76 .08 .08
	1.00	X	ITM	= I	.33 .33 .00 .33
	.88			D	.29 .29 .29 .13
					F    H    I    D
Week 16	1.00			F	.00 .17 .17 .67
	.25			H	.08 .76 .08 .08
	1.00	X	ITM	= I	.33 .33 .00 .33
	1.00			D	.33 .33 .33 .00

Prediction Point: 21 May 1968

<u>Weeks Out</u>	<u>Cum. Prob. of Pattern Shifts</u>	<u>Initial Transi- tion Matrix<sup>2</sup> (ITM)</u>		<u>Full Transi- tion Matrix</u>				
Week 1	.05	X	ITM	=	F	H	I	D
	.05				F	.95	.01	.03
	.05				H	.02	.94	.02
	.05				I	.02	.02	.94
Week 2	.10	X	ITM	=	D	.01	.03	.01
	.07				F	.90	.02	.02
	.20				H	.02	.94	.02
	.10				I	.07	.07	.79
Week 4	.20	X	ITM	=	D	.02	.06	.02
	.10				F	.81	.04	.04
	.80				H	.03	.91	.03
	.20				I	.26	.26	.22
Week 6	.30	X	ITM	=	D	.04	.11	.04
	.12				F	.69	.07	.07
	1.00				H	.04	.88	.04
	.30				I	.33	.33	.00
Week 8	.40	X	ITM	=	D	.07	.17	.07
	.14				F	.60	.09	.09
	1.00				H	.05	.85	.05
	.40				I	.33	.33	.00

<sup>2</sup>Initial Transition Matrix =

	F	H	I	D
F		.22	.22	.56
H	.33		.33	.33
I	.33	.33		.33
D	.22	.56	.22	

Prediction Point: 21 May 1968 (Con't)

<u>Weeks Out</u>	<u>Cum. Prob. of Pattern Shifts</u>	<u>Initial Transi- tion Matrix<sup>2</sup> (ITM)</u>		<u>Full Transi- tion Matrix</u>					
					F	H	I	D	
Week 10	.50	X	ITM	=	F	.50	.11	.11	.28
	H				.05	.85	.05	.05	
	I				.33	.33	.00	.33	
	D				.11	.28	.11	.50	
	.16								
	1.00								
	.50								
Week 12	.60	X	ITM	=	F	.40	.13	.13	.34
	H				.06	.82	.06	.06	
	I				.33	.33	.00	.33	
	D				.13	.34	.13	.40	
	.17								
	1.00								
	.60								
Week 14	.70	X	ITM	=	F	.31	.15	.15	.39
	H				.06	.82	.06	.06	
	I				.33	.33	.00	.33	
	D				.15	.39	.15	.31	
	.19								
	1.00								
	.70								
Week 16	.80	X	ITM	=	F	.19	.18	.18	.45
	H				.07	.79	.07	.07	
	I				.33	.33	.00	.33	
	D				.18	.45	.18	.19	
	.20								
	1.00								
	.80								
Week 18	.90	X	ITM	=	F	.10	.20	.20	.50
	H				.07	.79	.07	.07	
	I				.33	.33	.00	.33	
	D				.20	.50	.20	.10	
	.21								
	1.00								
	.90								
Week 20	1.00	X	ITM	=	F	.00	.22	.22	.56
	H				.07	.79	.07	.07	
	I				.33	.33	.00	.33	
	D				.22	.56	.22	.00	
	.22								
	1.00								
	1.00								

Prediction Point: 28 May

<u>Weeks Out</u>	<u>Cum. Prob. of Pattern Shifts</u>	<u>Initial Transi- tion Matrix<sup>3</sup> (ITM)</u>			<u>Full Transi- tion Matrix</u>				
						F	H	I	D
Week 1	.05	X	ITM	=	F	.95	.01	.01	.03
	H				.03	.95	.01	.01	
	I				.02	.02	.94	.02	
	D				.01	.03	.01	.95	
						F	H	I	D
Week 2	.10	X	ITM	=	F	.89	.03	.03	.05
	H				.04	.92	.02	.02	
	I				.06	.06	.82	.06	
	D				.03	.05	.03	.89	
						F	H	I	D
Week 4	.19	X	ITM	=	F	.80	.05	.05	.10
	H				.05	.89	.03	.03	
	I				.25	.25	.25	.25	
	D				.05	.10	.05	.80	
						F	H	I	D
Week 6	.29	X	ITM	=	F	.71	.07	.07	.15
	H				.06	.88	.03	.03	
	I				.33	.33	.00	.33	
	D				.07	.15	.07	.71	
						F	H	I	D
Week 8	.38	X	ITM	=	F	.61	.10	.10	.19
	H				.07	.87	.03	.03	
	I				.33	.33	.00	.33	
	D				.10	.19	.10	.61	

<sup>3</sup>

Initial Transition Matrix

=

	F	H	I	D
F		.25	.25	.50
H	.50		.25	.25
I	.33	.33		.33
D	.25	.50	.25	

Prediction Point: 28 May (Con't)

<u>Weeks Out</u>	<u>Cum. Prob. of Pattern Shifts</u>	<u>Initial Transi- tion Matrix<sup>3</sup> (ITM)</u>		<u>Full Transi- tion Matrix</u>				
					F	H	I	D
Week 10	.48			F	.52	.12	.12	.24
	.15			H	.08	.84	.04	.04
	1.00	X	ITM	=	I	.33	.33	.00
	.48			D	.12	.24	.12	.52
					F	H	I	D
Week 12	.57			F	.43	.14	.14	.29
	.16			H	.08	.84	.04	.04
	1.00	X	ITM	=	I	.33	.33	.00
	.57			D	.14	.29	.14	.43
					F	H	I	D
Week 14	.67			F	.32	.17	.17	.34
	.18			H	.09	.81	.05	.05
	1.00	X	ITM	=	I	.33	.33	.00
	.67			D	.17	.34	.17	.32
					F	H	I	D
Week 16	.76			F	.24	.19	.19	.38
	.19			H	.10	.80	.05	.05
	1.00	X	ITM	=	I	.33	.33	.00
	.76			D	.19	.38	.19	.24
					F	H	I	D
Week 18	.86			F	.13	.22	.22	.43
	.20			H	.10	.80	.05	.05
	1.00	X	ITM	=	I	.33	.33	.00
	.86			D	.22	.43	.22	.13
					F	H	I	D
Week 20	.95			F	.04	.24	.24	.48
	.21			H	.11	.79	.05	.05
	1.00	X	ITM	=	I	.33	.33	.00
	.95			D	.24	.48	.24	.04

Prediction Point: 25 June 1968

<u>Weeks Out</u>	<u>Cum. Prob. of Pattern Shifts</u>		<u>Initial Transi- tion Matrix<sup>4</sup> (ITM)</u>		<u>Full Transi- tion Matrix</u>
					F H I D
Week 1	.04				F .96 .01 .01 .02
	.04	X	ITM	=	H .02 .96 .01 .01
	.04				I .01 .01 .97 .01
	.04				D .01 .02 .01 .96
Week 2	.08				F H I D
	.06	X	ITM	=	F .92 .02 .02 .04
	.16				H .03 .93 .02 .02
	.08				I .05 .05 .85 .05
					D .02 .04 .02 .92
Week 4	.16				F H I D
	.08	X	ITM	=	F .83 .04 .04 .09
	.64				H .04 .92 .02 .02
	.16				I .21 .21 .37 .21
					D .04 .08 .04 .84
Week 6	.24				F H I D
	.10	X	ITM	=	F .77 .05 .05 .13
	1.00				H .05 .89 .03 .03
	.24				I .33 .33 .00 .33
					D .06 .11 .06 .77
Week 8	.32				F H I D
	.11	X	ITM	=	F .68 .07 .07 .18
	1.00				H .05 .89 .03 .03
	.32				I .33 .33 .00 .33
					D .09 .15 .09 .67

<sup>4</sup>Initial Transition Matrix =

	F	H	I	D
F		.22	.22	.56
H	.47		.27	.27
I	.33	.33		.33
D	.27	.47	.27	

Prediction Point: 25 June 1968 (Con't)

<u>Weeks Out</u>	<u>Cum. Prob. of Pattern Shifts</u>		<u>Initial Transi- tion Matrix<sup>4</sup> (ITM)</u>		<u>Full Transi- tion Matrix</u>
					F H I D
Week 10	.40				F .60 .09 .09 .22
	.13	X	ITM	=	H .06 .86 .04 .04
	1.00				I .33 .33 .00 .33
	.40				D .11 .19 .11 .59
					F H I D
Week 12	.48				F .51 .11 .11 .27
	.14	X	ITM	=	H .07 .85 .04 .04
	1.00				I .33 .33 .00 .33
	.48				D .13 .23 .13 .51
					F H I D
Week 14	.56				F .45 .12 .12 .31
	.15	X	ITM	=	H .07 .85 .04 .04
	1.00				I .33 .33 .00 .33
	.56				D .15 .26 .15 .44
					F H I D
Week 16	.64				F .36 .14 .14 .36
	.16	X	ITM	=	H .08 .84 .04 .04
	1.00				I .33 .33 .00 .33
	.64				D .17 .30 .17 .36
					F H I D
Week 18	.72				F .28 .16 .16 .40
	.17	X	ITM	=	H .08 .82 .05 .05
	1.00				I .33 .33 .00 .33
	.72				D .19 .34 .19 .28
					F H I D
Week 20	.80				F .19 .18 .18 .45
	.18	X	ITM	=	H .08 .82 .05 .05
	1.00				I .33 .33 .00 .33
	.80				D .22 .38 .22 .18

Prediction Point: 23 July 1968

<u>Weeks Out</u>	<u>Cum. Prob. of Pattern Shifts</u>		<u>Initial Transi- tion Matrix <sup>5</sup> (ITM)</u>		<u>Full Transi- tion Matrix</u>
					F H I D
Week 1	.03				F .96 .01 .01 .02
	.03	X	ITM	=	H .01 .97 .01 .01
	.03				I .01 .01 .97 .01
	.03				D .01 .02 .01 .96
					F H I D
Week 2	.07				F .92 .02 .02 .04
	.05	X	ITM	=	H .02 .96 .01 .01
	.14				I .05 .05 .85 .05
	.07				D .02 .04 .02 .92
					F H I D
Week 4	.14				F .87 .03 .03 .07
	.07	X	ITM	=	H .03 .93 .02 .02
	.55				I .18 .18 .46 .18
	.14				D .03 .07 .03 .87
					F H I D
Week 6	.21				F .79 .05 .05 .11
	.08	X	ITM	=	H .04 .92 .02 .02
	1.00				I .33 .33 .00 .33
	.21				D .05 .11 .05 .79
					F H I D
Week 8	.28				F .71 .07 .07 .15
	.10	X	ITM	=	H .05 .89 .03 .03
	1.00				I .33 .33 .00 .33
	.28				D .07 .15 .07 .71

---

<sup>5</sup> Initial Transition Matrix	=	F	H	I	D
		F	.24	.24	.53
		H	.45	.28	.28
		I	.33	.33	.33
		D	.24	.53	.24

Prediction Point: 23 July 1968 (Con't)

<u>Weeks Out</u>	<u>Cum. Prob. of Pattern Shifts</u>		<u>Initial Transi- tion Matrix<sup>5</sup> (ITM)</u>		<u>Full Transi- tion Matrix</u>
					F H I D
Week 10	.34			=	F .66 .08 .08 .18
	.11			=	H .05 .89 .03 .03
	1.00	X	ITM	=	I .33 .33 .00 .33
	.34			=	D .08 .18 .08 .66
					F H I D
Week 12	.41				F .58 .10 .10 .22
	.12			=	H .05 .89 .03 .03
	1.00	X	ITM	=	I .33 .33 .00 .33
	.41			=	D .10 .22 .10 .58
					F H I D
Week 14	.48				F .51 .12 .12 .25
	.13			=	H .06 .86 .04 .04
	1.00	X	ITM	=	I .33 .33 .00 .33
	.48			=	D .12 .25 .12 .51
					F H I D
Week 16	.55				F .45 .13 .13 .29
	.14			=	H .06 .86 .04 .04
	1.00	X	ITM	=	I .33 .33 .00 .33
	.55			=	D .13 .29 .13 .45
					F H I D
Week 18	.62				F .37 .15 .15 .33
	.15			=	H .07 .85 .04 .04
	1.00	X	ITM	=	I .33 .33 .00 .33
	.62			=	D .15 .33 .15 .37
					F H I D
Week 20	.69				F .29 .17 .17 .37
	.15			=	H .07 .85 .04 .04
	1.00	X	ITM	=	I .33 .33 .00 .33
	.69			=	D .17 .37 .17 .29

Prediction Point: 13 August 1968

<u>Weeks Out</u>	<u>Cum. Prob. of Pattern Shifts</u>	<u>Initial Transi- tion Matrix <sup>6</sup> (ITM)</u>		<u>Full Transi- tion Matrix</u>				
					F	H	I	D
Week 1	.03	X	ITM	=	F	.96	.01	.01 .02
	.03				H	.01	.97	.01 .01
	.03				I	.01	.01	.97 .01
	.03				D	.01	.02	.01 .96
Week 2	.06	X	ITM	=	F	.93	.02	.02 .03
	.04				H	.02	.95	.01 .02
	.13				I	.04	.04	.88 .04
	.06				D	.02	.03	.02 .93
Week 4	.13	X	ITM	=	F	.87	.03	.03 .07
	.06				H	.02	.94	.02 .02
	.50				I	.17	.17	.49 .17
	.13				D	.03	.07	.03 .87
Week 6	.19	X	ITM	=	F	.80	.05	.05 .10
	.08				H	.03	.92	.02 .03
	1.00				I	.33	.33	.00 .33
	.19				D	.05	.10	.05 .80
Week 8	.25	X	ITM	=	F	.75	.06	.06 .13
	.09				H	.03	.92	.02 .03
	1.00				I	.33	.33	.00 .33
	.25				D	.06	.13	.06 .75

---

<sup>6</sup> Initial Transition Matrix	=		F	H	I	D
		F		.25	.25	.50
		H	.38		.25	.38
		I	.33	.33		.33
		D	.25	.50	.25	

Prediction Point: 13 August 1968 (Con't)

<u>Weeks Out</u>	<u>Cum. Prob. of Pattern Shifts</u>	<u>Initial Transi- tion Matrix<sup>6</sup> (ITM)</u>		<u>Full Transi- tion Matrix</u>				
Week 10	.31	X	ITM	=	F	H	I	D
	.10				F	.68	.08	.08 .16
	1.00				H	.04	.89	.03 .04
	.31				I	.33	.33	.00 .33
Week 12		X	ITM	=	D	.08	.16	.08 .68
	.38				F	H	I	D
	.11				F	.61	.10	.10 .19
	1.00				H	.04	.89	.03 .04
Week 14	.38				I	.33	.33	.00 .33
		X	ITM	=	D	.10	.19	.10 .61
	.44				F	H	I	D
	.12				F	.56	.11	.11 .22
Week 16	1.00				H	.05	.87	.03 .05
	.44				I	.33	.33	.00 .33
		X	ITM	=	D	.11	.22	.11 .56
	.50				F	H	I	D
Week 18	.13				F	.49	.13	.13 .25
	1.00				H	.05	.87	.03 .05
	.50				I	.33	.33	.00 .33
		X	ITM	=	D	.13	.25	.13 .49
Week 20	.56				F	H	I	D
	.13				F	.44	.14	.14 .28
	1.00				H	.05	.87	.03 .05
	.56				I	.33	.33	.00 .33
Week 20		X	ITM	=	D	.14	.28	.14 .44
	.63				F	H	I	D
	.14				F	.36	.16	.16 .32
	1.00				H	.05	.86	.04 .05
Week 20	.63				I	.33	.33	.00 .33
					D	.16	.32	.16 .36

## C.A.C.I.

WASHINGTON, D.C. OFFICES

Section IV is confidential. It appears in the ~~Confidential~~  
Volume of this Report.

# C.A.C.I.

V

WASHINGTON, D.C. OFFICES

## COMPARISON OF TWO EVENTS DATA SOURCES

Vivian Moore  
James Moore  
Barbara Hughes  
Don Krysakowski

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## CONCLUSIONS

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The conclusions reached in this study are based on a comparison of two sources for events data, the New York Times (NYT) and the Foreign Broadcast Information Service Bulletin for Asia and the Pacific (FBIS). Although the findings are based on only one year of data, there are indications that the conclusions are important and can be generalized. The specific findings are:

- The overall distributions of events across categories are similar, although the quantity of events in the FBIS is much larger than in the NYT.
- The FBIS records Japanese interactions with more targets than does the NYT and with a somewhat more even emphasis across target nations.
- A number of events were reported only in one source.
- The FBIS material included many more neutral events--meetings, trips, etc.--than did the NYT.

A more generalized conclusion that results from the analysis is that sources within a country or region may have to be used to develop a data base sufficient to permit the development of indicators sensitive to initial, often relatively minor activities that precede an important change in policy direction. In other words, more reporting on a wider spectrum of events is required.

Another related conclusion is that multiple sources may be required. For example, the NYT naturally focuses on events directly involving the United States and records only the most important activities occurring between other pairs of countries. Thus, it would be unusual for the NYT to report on normal activities between Japan and Indonesia. A more complete view of international relations requires the integration of events data from both an international source such as the NYT and a regional or country source such as the FBIS or a publication from the area.

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## INTRODUCTION

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This paper compares two sources used in collecting events data on Japan during 1972: the New York Times (NYT) and the Foreign Broadcast Information Service Bulletin for Asia and the Pacific (FBIS). The objective is to determine how Japan's world is viewed through both of these data sources. With which nations does Japan interact most? What type of behavior does Japan exhibit in general and toward specific nations?

The paper examines the usefulness of the FBIS and the NYT as events data sources for Japan by determining the quality and richness of the data and the differences in analytic results of indicators applied to data from each source.

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## AGGREGATE COMPARISONS

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Robert Burrowes (1971) suggests several criteria for evaluating the usefulness of events data sources. These include: (1) the number of events from each source; (2) the qualitative differences among the sources, and (3) the "mix" of events from each source. This section compares the FBIS with the NYT according to these criteria.

All data are compared using only the 63 WEIS events categories or aggregations of those categories. All comparisons use official governmental representatives in Japan as the actors, and 1972 as the year in which the interaction occurred.

### DISTRIBUTIONS OF EVENTS BY CATEGORIES

Table 1 presents the total number of international events initiated by Japan in 1972. The number of events collected from the FBIS is 546 more than from the NYT.

TABLE 1

Total Events Initiated by Japan in 63 WEIS Categories

Source	Total Events
<u>FBIS</u>	701
<u>NYT</u>	155

### Distribution Over Seven Categories

Table 2 breaks the events down into seven categories (Rubin, 1973). These categories combine the 63 WEIS events into seven aggregations.

TABLE 2  
Seven Events Categories

1. Military Incidents	Small-scale, brief, and sporadic use of military force.
2. Coercion	Attempt to influence through implicit or explicit threat, or by employing strong sanctions.
3. Pressure	Attempt to influence through criticism, rejection, or accusation, or by invoking mild sanctions.
4. Communication/Consultation	Establish formal or informal contact and present respective positions.
5. Support/Agreement	Provide verbal or material support and/or reach agreement.
6. Reconciliation	Retract or amend hostile or negative statements or actions.
7. Military Disengagement	Cease military hostilities through withdrawal or surrender.

The first three categories of events are negative; the fourth is neutral; the fifth through seventh are positive. Table 3 presents the distribution of events over the seven categories.

Analysis of Seven Events Categories: Table 3

- Quantity of Events

Table 3 shows that there is a significant increase in events categories 3, 4, and 5 and a very small increase in categories 2 and 6. In categories 1 and 7 no events were recorded from either source. The highest increase is in the communication/consultation category; the lowest is in the reconciliation category.

- Quality of Events

Table 3 indicates that the distribution of events is quite similar; the product-moment correlation between the frequencies in the NYT and FBIS is .87. One noticeable difference is that the largest percentage of events occurs

in category 4 (communication/consultation) for the FBIS and in category 5 (support/agreement) for the NYT. The NYT also reports a higher proportion of events in the negative categories 2 and 3 (18 percent as opposed to 10.1 percent in the FBIS).

TABLE 3  
Distribution of Rubin Seven Events Categories: FBIS and NYT

Category	% in <u>NYT</u> * (n=125)	% in <u>FBIS</u> * (n=545)	Frequency Increase <u>FBIS</u> over <u>NYT</u>
1. Military Incidents	0	0	0
2. Coercion	3.2	2.2	8
3. Pressure	14.8	7.9	20
4. Communication/ Consultation	32.8	55.6	262
5. Support/Agreement	42.4	33.4	129
6. Reconciliation	3.2	.9	1
7. Military Disengagement	0	0	0

\* % represents the number of events in each of the seven categories divided by the sum of all events. Not every event type is in one of the seven categories; thus percentages may not sum to 1.0.

#### Distribution Over Three Categories

Table 4 breaks down the events into different aggregations. These aggregations are: cooperation, verbal conflict, and physical conflict. Cooperation includes such acts as APPROVE, GRANT, REWARD; verbal conflict includes such acts as ACCUSE, WARN, THREATEN; and physical conflict includes such acts as SEIZE, FORCE.

TABLE 4  
Distribution of Cooperation, Verbal Conflict,  
and Physical Conflict Events Categories: FBIS and NYT

Category	% in <u>FBIS</u>	% in <u>NYT</u>	Frequency Increase <u>FBIS</u> over <u>NYT</u>
Cooperation	91.3	83.0	233
Verbal Conflict	8.2	15.0	87
Physical Conflict	.5	1.6	0

Analysis of Three Events Categories: Table 4

- Quantity of Events

Table 4 shows that in all categories except physical conflict, there is a large increase in the number of events collected from the FBIS compared to the NYT.

- Quality of Events

The two distributions have some differences. Although both sources report the largest proportion of events as cooperative, the NYT reports a larger proportion of conflictive events (16.6 percent as compared to 8.7 percent from the FBIS) in relation to all events reported. In general, however, the two distributions are quite similar.

Distribution Over 22 Categories

Figures 1 and 2 represent a further breakdown of the distribution of events. Figure 1 is the distribution of events from Japan to all targets in 22 events categories. Figure 2 is the distribution of events from Japan to all nations in these same categories.<sup>1</sup>

<sup>1</sup> "All targets" includes international organizations, groups of nations, and events without a specific target. "All nations" excludes these targets and includes only specific countries as targets of events.

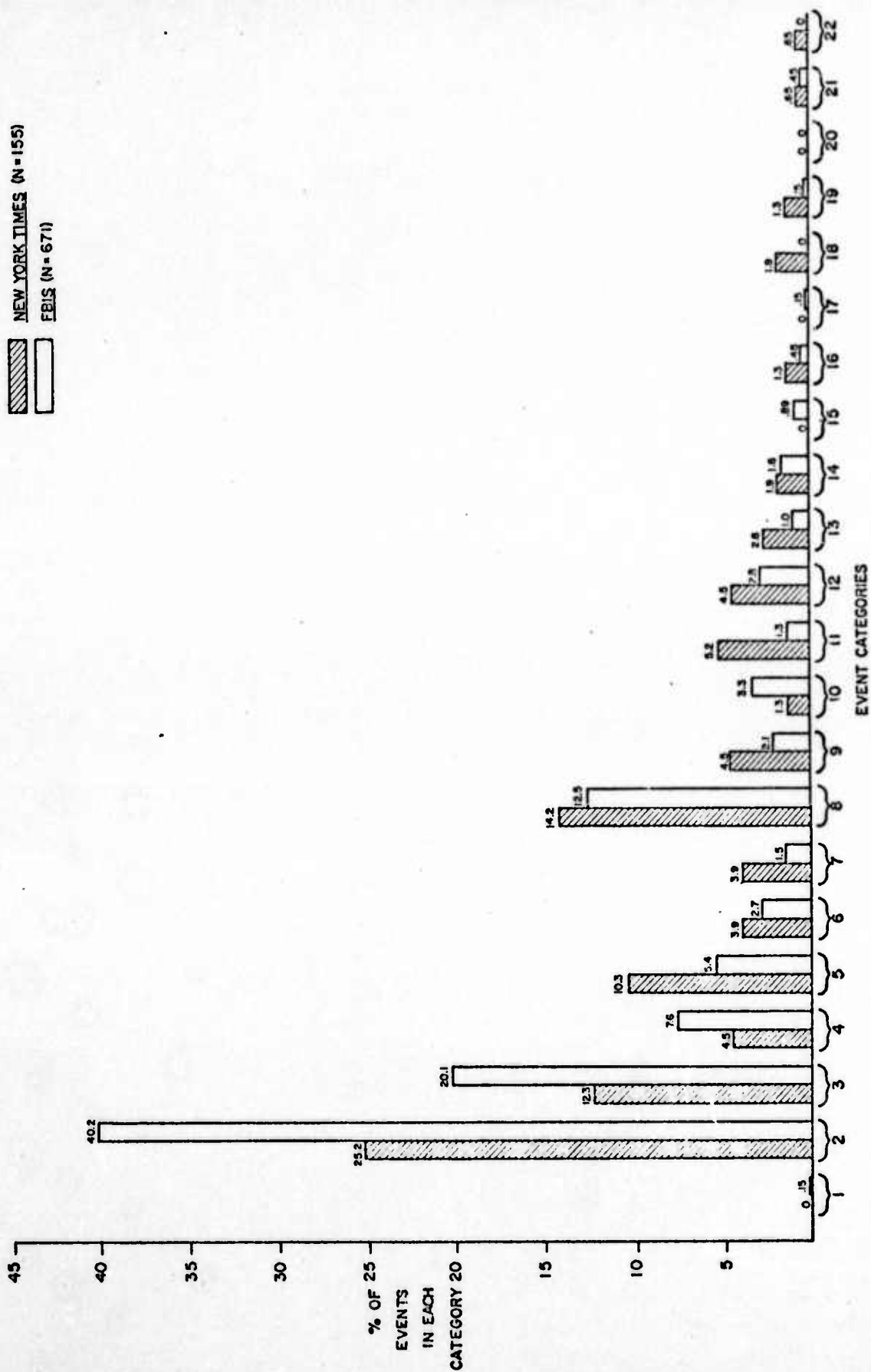


FIGURE 1. DISTRIBUTION OF EVENTS BY CATEGORY: JAPAN TO ALL TARGETS.

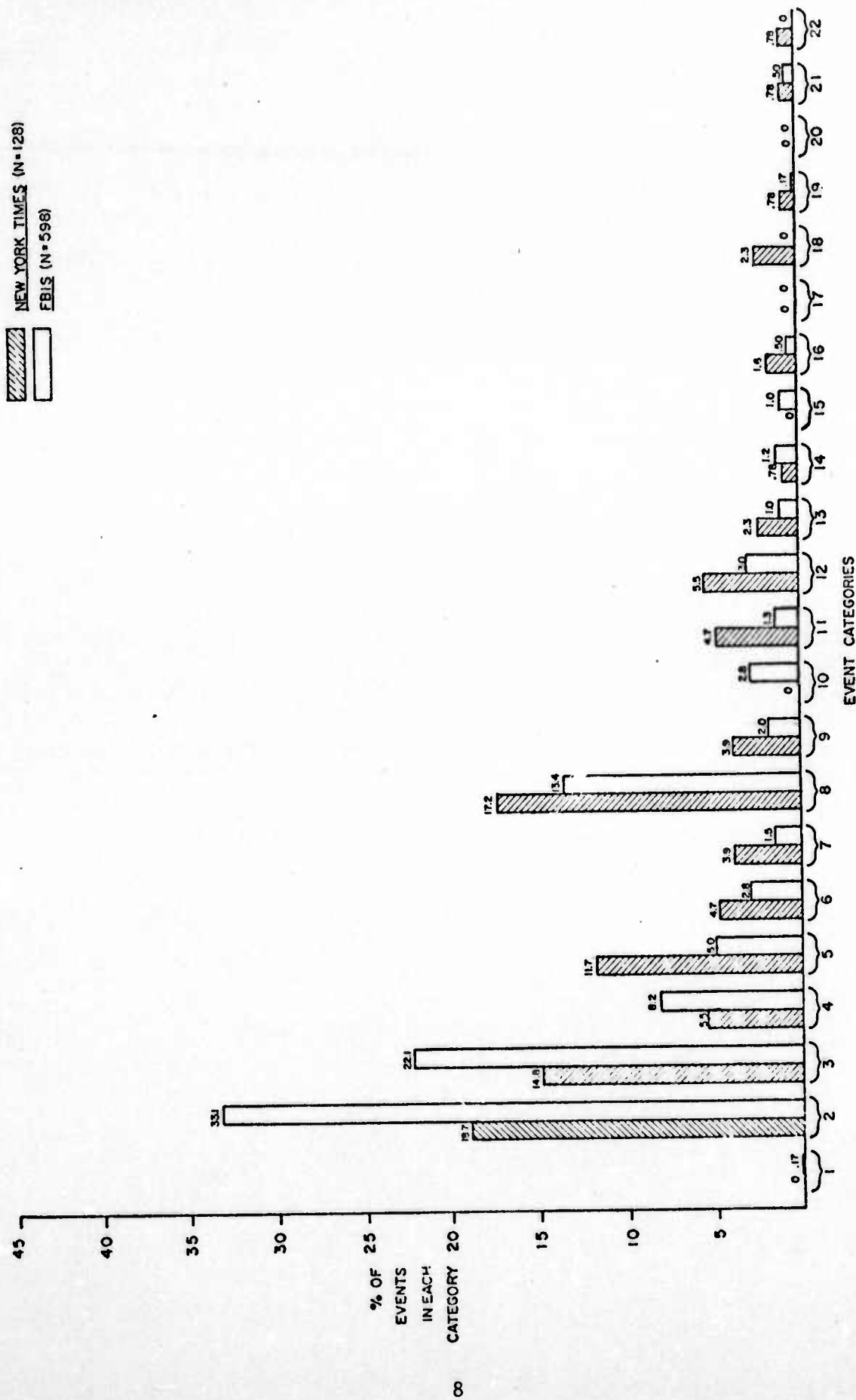


FIGURE 2. DISTRIBUTION OF EVENTS BY CATEGORY: JAPAN TO ALL NATIONS.

These categories are:

- |             |                         |
|-------------|-------------------------|
| 1. Yield    | 12. Accuse              |
| 2. Comment  | 13. Protest             |
| 3. Consult  | 14. Deny                |
| 4. Approve  | 15. Demand              |
| 5. Promise  | 16. Warn                |
| 6. Grant    | 17. Threaten            |
| 7. Reward   | 18. Demonstrate         |
| 8. Agree    | 19. Reduce Relationship |
| 9. Request  | 20. Expel               |
| 10. Propose | 21. Seize               |
| 11. Reject  | 22. Force               |

Analysis of 22 Events Categories: Figures 1 and 2

- Quantity of Events

The quantity of events is generally more for the FBIS than for the NYT, as is shown in the previous tables.

- Quality of Events

The distribution of events over 22 categories is quite similar. The categories in which the proportion of events is greater in the FBIS than in the NYT include YIELD, COMMENT, CONSULT, APPROVE, PROPOSE, DEMAND, and THREATEN. In all other categories, the proportion of events is greater in the NYT than in the FBIS. The overall correlation is .85, indicating a strong relationship among the distributions of events in the two sources.

Conclusion

The quantity of events generally is much larger in the FBIS data collection. However, the overall distribution of events across categories is quite similar in three different aggregations--the seven categories, the cooperation-verbal conflict-physical conflict categories, and the 22 WEIS categories--although there are certain differences in the proportions of various events categories reported. The FBIS collection focuses more on neutral events

such as meetings, while the NYT collection focuses more on positive/negative events such as grants and accusations.

## DISTRIBUTIONS OF EVENTS TO TARGET COUNTRIES

### Distribution of Events to Individual Targets

This section identifies which nations are the target of Japan's actions and attempts to draw some conclusions about the scope and direction of Japanese interactions as viewed through the two sources. Table 5 presents the proportion of all events initiated by Japan to individual countries.

TABLE 5  
Distribution of Events by Target\*

Target	% of <u>NYT</u> Events (n = 128)	% of <u>FBIS</u> Events (n = 612)
<u>USA</u>	42.90	24.50
<u>Latin America</u>		
Cuba	0.00	.16
Guatemala	0.00	.16
Mexico	0.00	.33
Paraguay	0.00	.33
Peru	1.60	0.00
<u>Western Europe</u>		
United Kingdom	.78	2.10
France	1.60	.82
West Germany	0.00	.33
Austria	0.00	.16
<u>Eastern Europe</u>		
Albania	0.00	.33
Czechoslovakia	0.00	.49
East Germany	0.00	.65

\* The events are all international events directed by Japan to these particular targets.

TABLE 5 (Cont.)  
Distribution of Events by Target

Target	% of <u>NYT</u> Events (n = 128)	% of <u>FBIS</u> Events (n = 612)
<u>Eastern Europe</u> (Cont.)		
Poland	0.00	.16
Rumania	0.00	.33
Yugoslavia	0.00	.49
<u>Central Europe</u>		
Iran	.78	.16
Turkey	0.00	.16
<u>Middle East</u>		
United Arab Emirates	0.00	.16
Israel	3.10	.33
<u>Africa</u>		
Nigeria	0.00	.16
Gabon	0.00	.16
<u>USSR/Mongolia</u>		
USSR	12.50	21.70
Mongolia	.78	.98
<u>South Asia</u>		
Bangladesh	0.00	.98
Pakistan	0.00	.49
Nepal	0.00	.16
<u>Southeast Asia</u>		
Burma	0.00	.16
Cambodia	1.60	.16
Laos	.78	.33
Thailand	1.60	0.00
South Vietnam	2.30	.49

TABLE 5 (Cont.)  
Distribution of Events by Target

Category	% of <u>NYT</u> Events (n = 128)	% of <u>FBIS</u> Events (n = 612)
<u>Non-Communist Pacific</u>		
Australia	0.00	.16
Taiwan	7.00	5.70
Fiji	0.00	.16
Indonesia	.78	3.30
South Korea	1.60	3.90
Malaysia	0.00	.16
New Zealand	0.00	.16
Singapore	0.00	.16
Western Samoa	0.00	.16
Philippines	.78	0.00
<u>North Vietnam/ North Korea</u>		
North Vietnam	1.60	2.00
North Korea	2.30	5.20
<u>China</u>	16.40	20.60

Table 5 shows that the distribution of Japan's events to target countries is different in the two sources. In the FBIS collection, the top five targets are the United States, Soviet Union, People's Republic of China, Taiwan, and North Korea. In the NYT, the top five targets are the United States, People's Republic of China, Soviet Union, Taiwan, and Israel. In addition, the FBIS reports interaction with Latin America, Eastern Europe, Africa, and South Asia, whereas the NYT does not report any interaction with these regions (except Peru). Almost 50 percent of the events reported in the NYT are from Japan to the United States, while only about 25 percent of the events reported in the FBIS are from Japan to the United States. This may reflect the NYT's emphasis on the United States. The FBIS shows a wider regional scope for Japan's interaction than does the NYT.

### Distribution of Events to Regions

A related question involves the proportion of Japan's actions directed to regions of the world. Figure 3 shows the relative emphasis each source places on Japanese interactions with the following areas:

United States	Arab Middle East/North Africa	
Soviet Union/Mongolia	Israel	
East Europe	People's Republic of China	} Asia
West Europe	North Vietnam/North Korea	
Central Europe	South Asia	
Latin America	Southeast Asia	
Africa	Non-Communist Pacific	

According to the FBIS, Japan focuses most of its attention on Asia (44%). Within Asia, most interaction is with Communist regimes--China, North Vietnam and North Korea. Secondly, Japan focuses attention on the United States (25%), followed closely by the Soviet Union (22.5%).

According to the NYT, Japan focuses most of its attention on the United States (42.9%), followed by Asia (34.9%). Within Asia, the primary focus is on Communist regimes. A third focus is on the People's Republic of China (23.4%) with the Soviet Union fourth in relative emphasis (14.3%).

### Conclusion

In general, the FBIS records Japanese interactions with more countries than does the NYT. The NYT places emphasis on Japanese interactions with the United States, while the FBIS emphasizes Japan's role in Asia. The NYT focuses more on Japan's interactions with China than with the Soviet Union, while the FBIS does the opposite. The FBIS collection broadens the scope of Japan's interactions to include Eastern Europe, Africa, and South Asia--regions not included in the NYT collection for 1972.

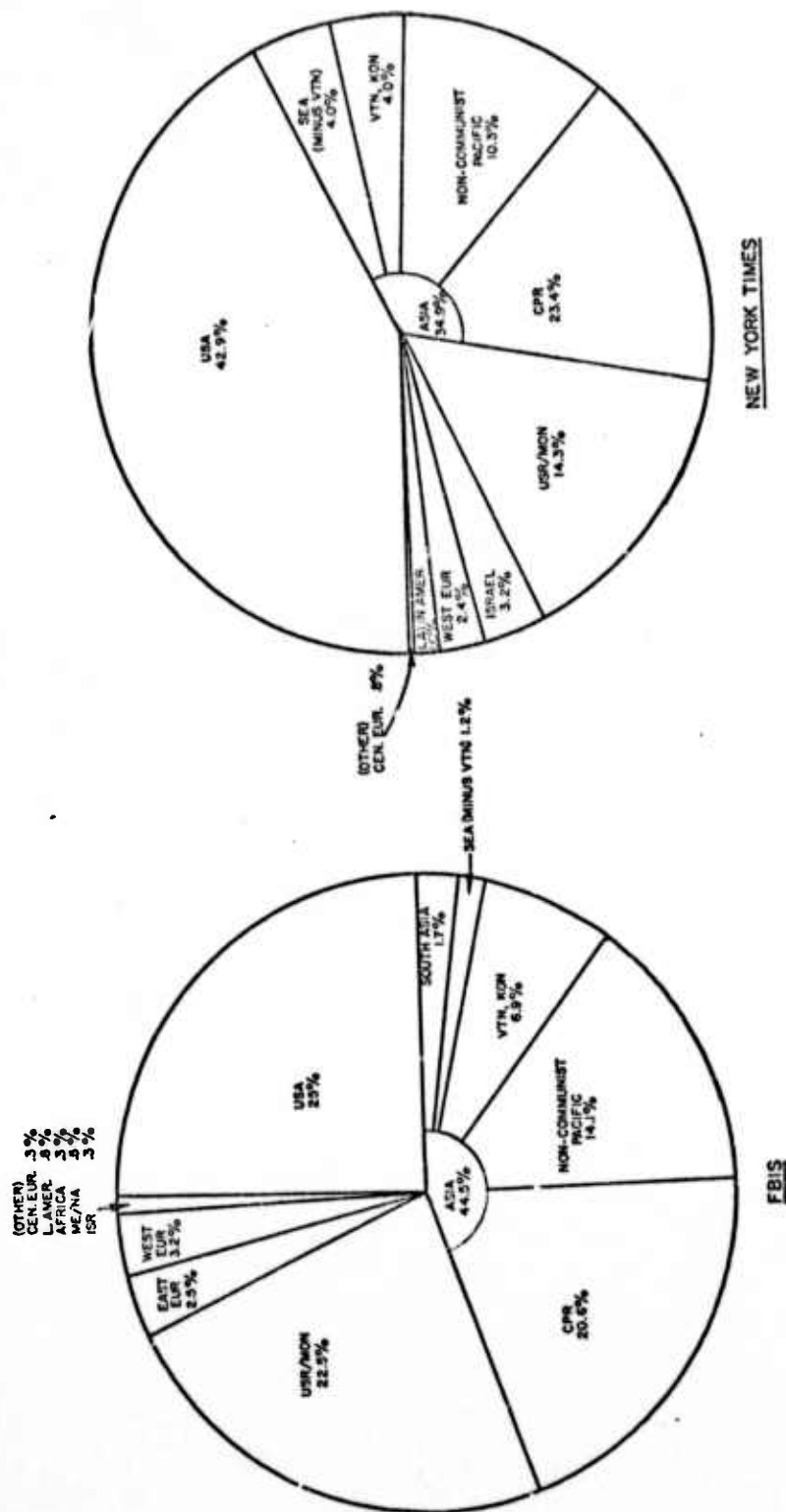


FIGURE 3. DISTRIBUTION OF EVENTS: JAPAN TO WORLD REGIONS.

THE "MIX" OF EVENTS

In comparing the two sources, it is important to determine which events are reported in one source and are not reported in the other. Table 6 presents all the events that were reported in the NYT and not in the FBIS for the first six months of 1972.

TABLE 6

Events Reported in the NYT and not in the FBIS

1/7/72

JAP PRM SATO AND USA PRS NIXON AGREE ON A DATE FOR THE REVERSION OF OKINAWA TO JAP

1/10/72

JAP AMB TO USA USHIBA WARNS USA THAT USA PRS NIXON TRIP TO CHN NEXT MONTH MIGHT BE "THE BEGINNING OF A PROCESS OF UNRAVELING OUR MUTUAL SECURITY IN THE FAR EAST"

1/10/72

JAP AMB TO USA USHIBA PLEADS FOR BETTER COMMUNICATION BETWEEN USA AND JAP TO PRESERVE COLLABORATION BETWEEN THE TWO NATIONS "THIS QUESTION OF UNDERSTANDING AND COMMUNICATING LIES AT THE VERY HEART OF OUR OCCASIONAL FRICTIONS OF THE PAST, AND OF OUR PROSPECTS FOR BUILDING A SOLID BASE IN THE FUTURE"

1/10/72

JAP AMB TO USA USHIBA SAYS THAT IF A USA RAPPROCHEMENT WITH CHN TAKES PLACE AT THE COST OF WEAKENING USA TIES WITH JAP, "BOTH OUR COUNTRIES WOULD LOSE HEAVILY AND INCUR VERY GREAT RISKS"

1/10/72

JAP AMB TO USA USHIBA SAYS "THE FREQUENT ATTACKS FROM CHN ON ALLEGED JAP MILITARISM AND IMPERIALISM, HOWEVER ABSURD, MAY INDICATE THAT CHN HOPES TO ISOLATE JAP POLITICALLY IN THE PROCESS OF EVOLVING A NEW RELATIONSHIP WITH THE USA"

1/15/72

JAP PRM SATO SAYS "I HAVE NOT BEEN ABLE TO FULLY TRUST THE USA SINCE THE SUDDEN ANNOUNCEMENT OF THE PRESIDENT'S PLAN TO VISIT CHN AND USA DOLLAR DEFENSE MEASURES THAT INCLUDED THE 10% SURCHARGE"

1/15/72

JAP PRM SATO SAYS "I CAN SAY THAT THE USA IS A TRUSTWORTHY COUNTRY NOW THAT IT HAS SHOWED US ALL SINCERITY IN THE COURSE OF THE NEGOTIATIONS IN OKINAWA REVERSION"

1/28/72

JAP JOINT COMMUNIQUE WITH USR ENVISIONS THE BEGINNING OF NEGOTIATIONS THIS YEAR ON A TREATY FORMALLY ENDING THE WORLD WAR II HOSTILITIES BETWEEN JAP AND USR

1/29/72

JAP PRM SATO NOTES WITH SATISFACTION THAT USR FM GROMYKO HAS AGREED TO BEGIN NEGOTIATIONS WITHIN THE YEAR

2/9/72

JAP AND USA CONCLUDE MAJOR TRADE AGREEMENTS

2/24/72

JAP REFUSES USA REQUEST THAT JAP NOT SEND JAP FIRST OFFICIAL MISSION TO VTN THIS MONTH

2/24/72

JAP CHARGES THAT USA TRIED TO BLOCK THE JAP OFFICIAL MISSION TO VTN COMPLETELY, NOT JUST TO POSTPONE IT

2/25/72

JAP CALLS FOR A COMBINED ASSAULT BY THE WORLD'S MAJOR TRADING NATIONS ON BARRIERS TO INTERNATIONAL TRADE IN 1973

3/7/72

JAP URGES OTHER MEMBERS OF THE UNO GENEVA DISARMAMENT CONFERENCE TO JOIN IN ISSUING A UNANIMOUS INVITATION TO CHN AND FRN TO PARTICIPATE IN THE NEGOTIATIONS AS SOON AS POSSIBLE

3/9/72

JAP PRM SATO PREDICTS THAT CHN WILL VOLUNTARILY LIMIT CHN SUPPORT OF VTN AND VCG BECAUSE OF USA PRS NIXON DISCUSSIONS WITH CHN

3/9/72

JAP PRM SATO SAYS THAT TALKS ON A PEACE TREATY FORMALLY ENDING WORLD WAR II FOR JAP AND USR ARE TO BEGIN BEFORE THE END OF THE YEAR, BUT INDICATES THAT THERE IS NOT YET ANY AGREEMENT ON THE BASIC TERRITORIAL ISSUE INVOLVING THE KURILE ISLANDS

4/1/72

JAP AND PER SIGN AGREEMENT UNDER WHICH JAP WILL SUPPLY CREDIT WORTH ABOUT \$12 MILLION FOR CONSTRUCTION OF A MICROWAVE COMMUNICATIONS NETWORK IN PER

4/1/72

JAP SUPPLIES PER WITH CREDIT WORTH ABOUT \$12 MILLION FOR CONSTRUCTION OF A MICROWAVE COMMUNICATIONS NETWORK IN PER

4/13/72

JAP AND TAI MAKE AGREEMENT WHEREBY JAP WILL EXTEND CREDITS OF \$208 MILLION TO TAI TO ASSIST TAI THIRD FIVE-YEAR PLAN FOR ECONOMIC AND SOCIAL DEVELOPMENT

4/13/72

JAP EXTENDS CREDITS OF \$208 MILLION TO TAI TO ASSIST TAI THIRD FIVE-YEAR PLAN FOR ECONOMIC AND SOCIAL DEVELOPMENT

4/13/72

JAP HOSTS USA UNDER SEC OF TREASURY FOR MONETARY AFFAIRS VOLCKER WHO IS IN JAP TO SOUND OUT JAP OFFICIALS ON THE FORUM FOR NEGOTIATING MONETARY AND TRADE REFORMS

4/25/72

JAP DELEGATE TO THE UNO GENEVA DISARMAMENT CONFERENCE REJECTS USR DRAFT OF A TREATY FOR THE PROHIBITION OF CHEMICAL WEAPONS, SAYING THAT PROVISIONS FOR DETECTING VIOLATIONS ARE INADEQUATE

4/25/72

JAP REP TO THE UNO GENEVA DISARMAMENT CONFERENCE TELLS THE CONFERENCE THAT JAP WILL FIRST DECIDE WHAT TYPES OF CHEMICAL WEAPONS SHOULD BE PROHIBITED, THEN TRY TO AGREE ON VERIFICATION PROCEDURES

5/6/72

JAP STEEL PRODUCERS AGREE TO NEW, THREE-YEAR EXPORT RESTRAINTS WITH USA THAT ARE INTENDED TO REDUCE STEEL IMPORTS INTO THE USA

5/13/72

JAP ASSURES USA VP AGNEW THAT JAP WILL CONTINUE TO SUPPORT THE USA POSITION IN VIETNAM

5/20/72

USA AND JAP REACH AGREEMENT ON RESUMPTION OF ECONOMIC TALKS

5/31/72

3 JAP GUNMEN OPEN FIRE IN PASSENGER TERMINAL OF ISR TEL AVIV AIRPORT KILLING OVER 20 PEOPLE

6/1/72

JAP FM TANAKA SENDS REGRETS TO ISR OVER MASSACRE AT TEL AVIV AIRPORT

6/5/72

JAP ENVOY FUKUNAGA BRINGS ISR GOVT A FORMAL CONDOLENCE OVER RECENT TEL AVIV MASSACRE BY JAP TERRORISTS

6/10/72

JAP ANNOUNCES A \$15 MILLION FUND FOR VICTIMS OF THE ISR TEL AVIV AIRPORT MASSACRE ON MAY 20, THE MONEY IS DEPOSITED WITH THE IRC FOR DISTRIBUTION

6/23/72

JAP DELEGATE NISIBORI TO THE UN ENVIRONMENTAL CONFERENCE REBUKES CHN AND FRN FOR SEEKING TO IMPROVE THEIR NUCLEAR ARSENALS BY EXPLODING ATOMIC BOMBS IN THE ATMOSPHERE WHILE REFUSING TO PARTICIPATE IN THE CONFERENCE EFFORTS TO CURB THE ARMS RACE

6/23/72

JAP DELEGATE NISIBORI TO THE UN ENVIRONMENTAL CONFERENCE CRITICIZES THE USA AND USSR FOR FAILING TO MAKE ANY PROGRESS IN EXTENDING TO UNDERGROUND TESTS THE 1963 TEST BAN TREATY

6/29/72

JAP FM EXPRESSES DEEP REGRET OVER FRN NUCLEAR TEST

#### Conclusion

From the 63 Japanese actions reported in the NYT, 56 percent do not appear in the FBIS collection. However, there are many events recorded in the FBIS that are not in the NYT, as is clear from the numerical comparisons presented earlier.

The above statistic leads one to conclude, as Azar (1972) does in his study of Middle East Data sources, that multiple sources are best for obtaining a more comprehensive view of the country's interactions. It also makes it clear that the numerical superiority of the FBIS does not mean that it therefore contains all of the NYT events plus additional ones.

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## COMPARISON OF POLICY STYLE AND RELATIONS MEASURES

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This section describes results of analyzing the two events data sets collected from the New York Times (NYT) and the Foreign Broadcast Information Service Bulletin (FBIS) for the year 1972 for three dyads--Japan-United States, Japan-Soviet Union, and Japan-People's Republic of China. The criteria for comparison are: (1) the quantity of events from each source, and (2) the stability of the indicators, i.e., the extent to which the occurrence or non-occurrence of a few events affects an indicator.

Two indicators are applied to each data set: policy style ( $S, S_q$ ) and relations ( $R, R_q$ ) (Moore, et al., 1973). Policy style measures the quality of actions directed by one country toward another in terms of the mix of positive, negative, and neutral events. Relations measures the quality of actions directed by each country toward the other in terms of the mix of positive, negative, and neutral events. These measures range from +1.0 to -1.0 (Rubin, 1973). The indicators  $S$  and  $R$  are applied to the NYT; the variants  $S_q$  and  $R_q$  are applied to the FBIS.

There are two differences between the  $S$  and  $R$  measures and the  $S_q$  and  $R_q$  measures. First, the "q" measures do not provide for neutral events; events defined as neutral in  $S$  and  $R$  algorithms are considered positive in  $S_q$  and  $R_q$ . Second, the "q" measures are constructed to include extraordinarily negative events (e.g., threats, military clashes) so that when these events occur, the indicators drop below the -1.0 level. These "q" events express a particularly negative relationship between two countries. Table 7 shows which indicators are applied to each data set for comparison.

In this analysis, the time points in 1972 are slightly different for each data source. The NYT data are aggregated quarterly by calendar months beginning in January. The FBIS data are aggregated into 12-week periods. Thus, for any given quarter, the NYT data may or may not coincide with FBIS data

TABLE 7  
Applications of Indicators to Data Source

Indicators	<u>NYT</u>	<u>FBIS</u>
Policy Style (S)	X	
Policy Style ( $S_q$ )		X
Relations (R)	X	
Relations ( $R_q$ )		X

depending on whether the 3-month period covers the same 12-week period in the FBIS. However, this slight time difference is of little consequence in examining general variations and trends in the two data sets.

POLICY STYLE: S AND  $S_q$ \*

Japan→United States; United States→Japan

Figures 4 and 5 show Japan→U.S. and U.S.→Japan policy style. The first plot is the S measure applied to the NYT, and the second is the  $S_q$  measure applied to the FBIS. The two plots are similar in that both style measures fluctuate in the most positive sector. The  $S_q$  measure is consistently more positive than the S measure, and in both cases U.S. behavior toward Japan tends to be more positive than Japanese behavior toward the United States.

The U.S.→Japan style measures yield decidedly similar indices. The Japan→U.S. styles are less similar although both the NYT and the FBIS results remain within the same range of positive behavior. The major disparity occurs in the third quarter when the FBIS shows a rise while the NYT shows a decline in policy style. However, since both measures are so positive, this small variation is not sufficient enough to conclude that the results are dissimilar.

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\* The data are in Appendix I.

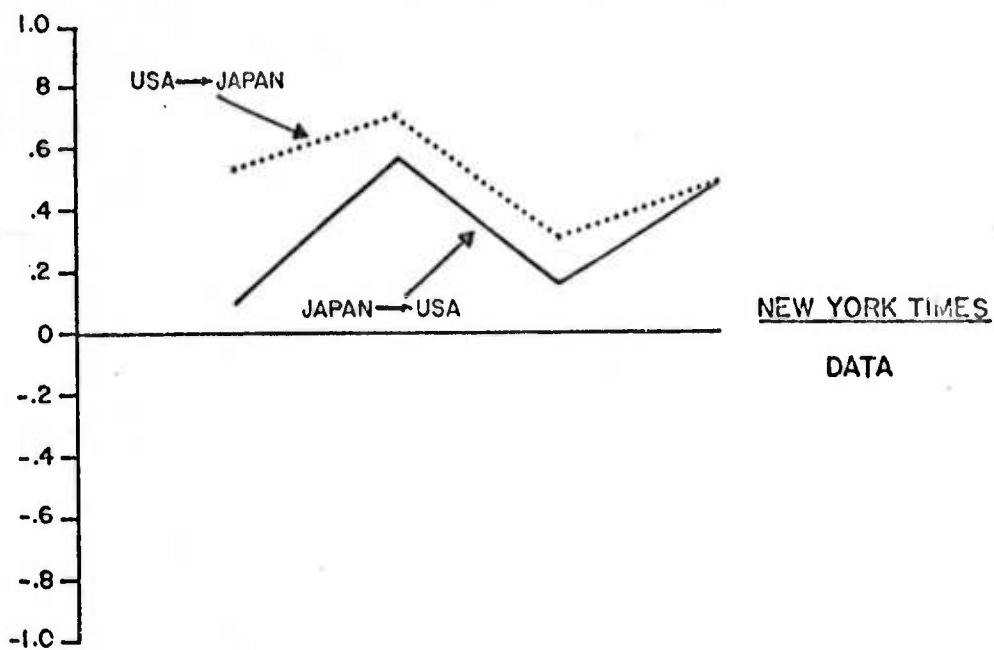


FIGURE 4. POLICY STYLE FOR JAPAN-US (NEW YORK TIMES DATA): 1972.

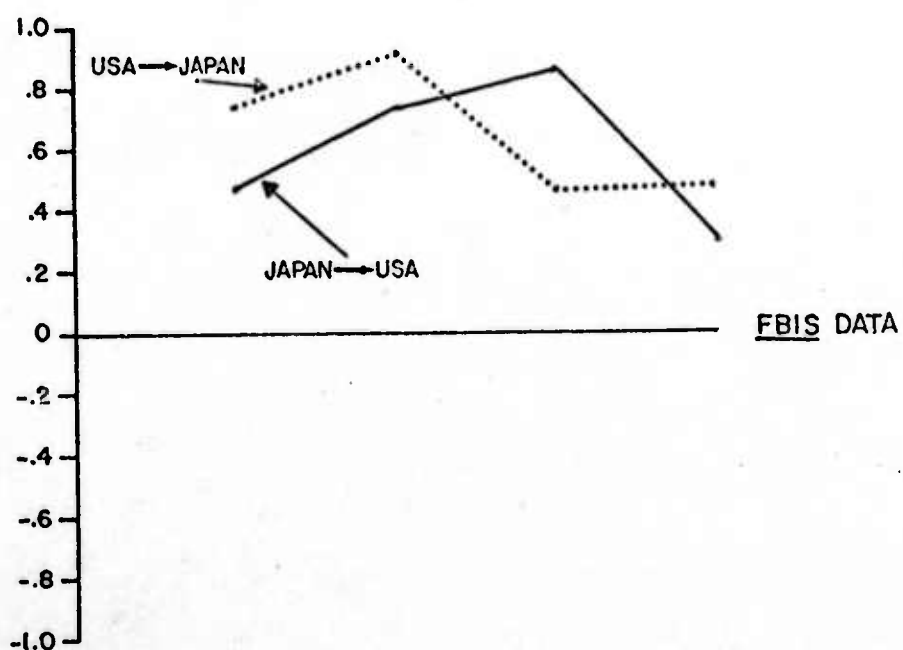


FIGURE 5. POLICY STYLE<sub>q</sub> FOR JAPAN-US (FBIS DATA): 1972.

#### Japan→Soviet Union; Soviet Union→Japan

Figures 6 and 7 show Japanese→Soviet and Soviet→Japanese style. In this dyad there are much stronger differences between the FBIS and the NYT data. In part, these differences may be due to the small number of events in the NYT (for this dyad  $n = 23$ ). The NYT and the FBIS plots are different, but both fluctuate between the positive and negative areas rather than remaining only in one area.

The FBIS plot (Figure 7) is most interesting because it shows an extremely positive policy style by the Japanese toward the Soviets while the Soviet policy style drops with the occurrence of  $q$  events in the second and fourth quarters. If  $q$  events are disregarded, as in the dotted line, both Soviet and Japanese behavior are highly positive.

#### Japan→People's Republic of China; People's Republic of China→Japan

In the final dyad, Japan and the People's Republic of China, the two sources provide results that are different in degree but somewhat similar in direction (Figures 8 and 9). The FBIS portrays a consistently more positive and stable relationship between the two countries. The NYT shows the two countries achieving positive interaction only in the last two time periods. However, the second period (where the measure drops to  $-1.0$ ) has only one event for each actor; thus the precipitous drop must be viewed with this in mind.

#### Conclusion

The policy style ( $S, S_q$ ) measures applied respectively to the NYT and FBIS data yield the following results:

- (1) Both measures show a positive policy style for the Japan-U.S. dyad.
- (2) Both measures show similar fluctuations between positive and negative policy style for the Japan-USSR dyad.

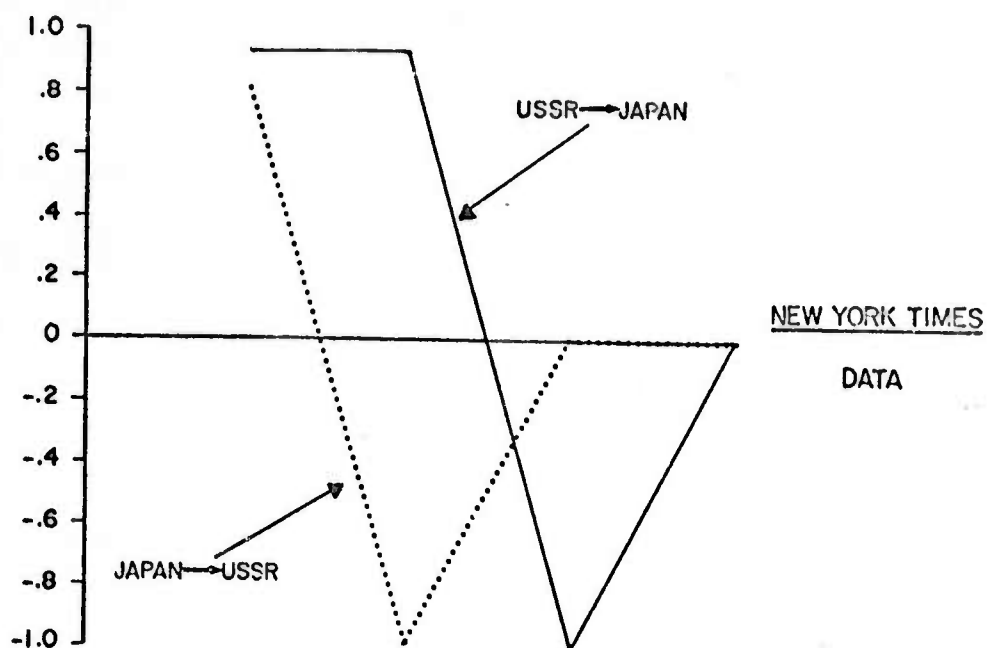


FIGURE 6. POLICY STYLE FOR JAPAN-USSR (NEW YORK TIMES DATA): 1972.

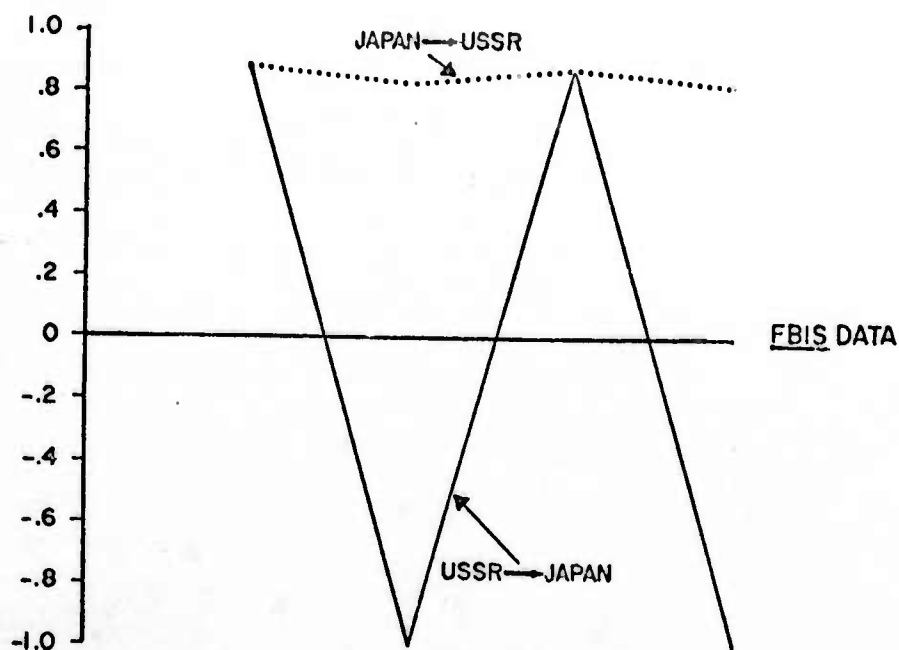


FIGURE 7. POLICY STYLE<sub>q</sub> FOR JAPAN-USSR (FBIS DATA): 1972.

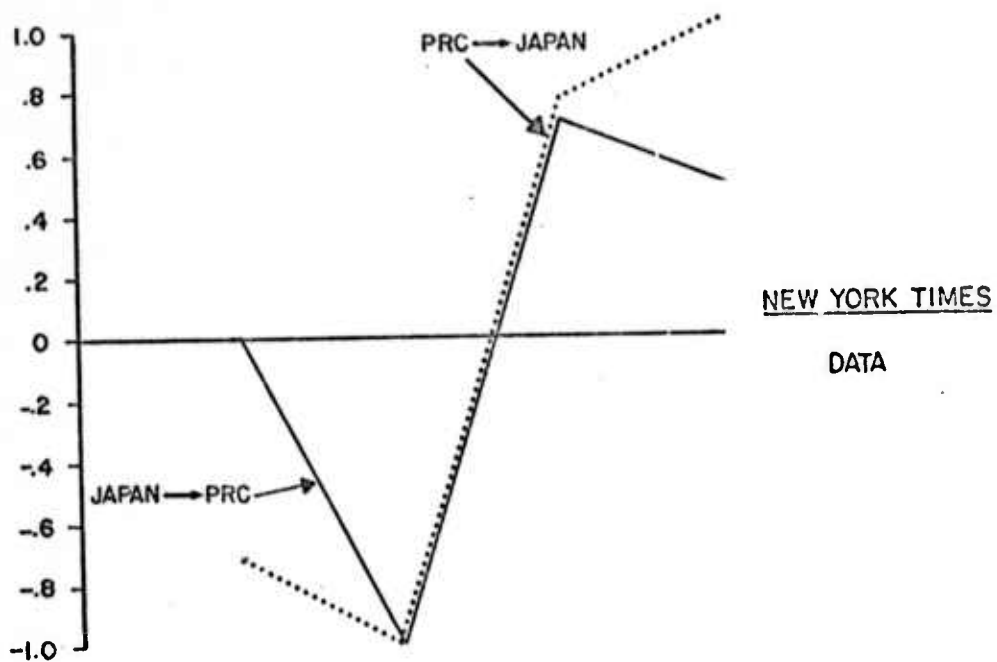


FIGURE 8. POLICY STYLE FOR JAPAN-PRC (NEW YORK TIMES DATA): 1972.

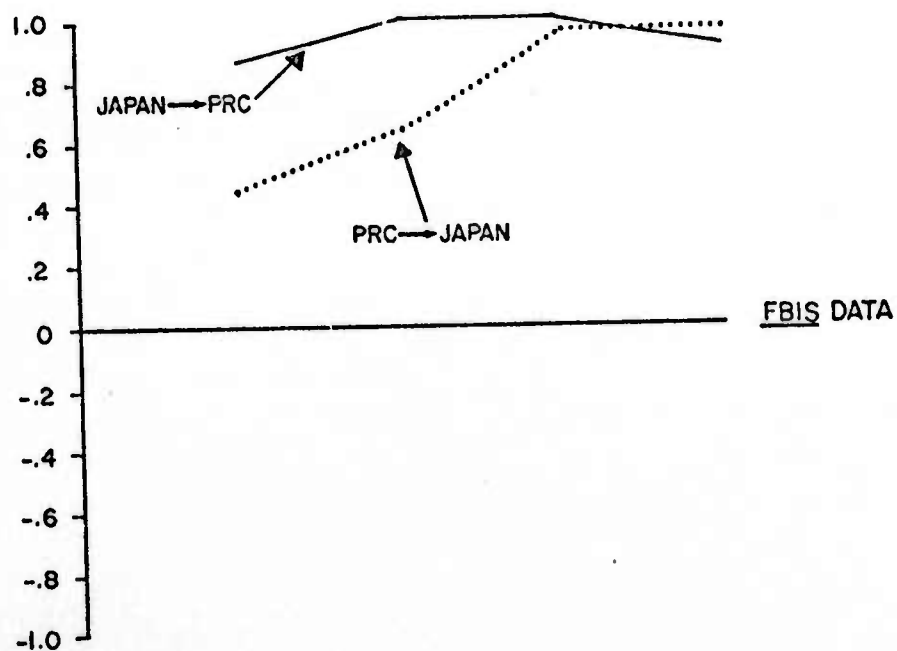


FIGURE 9. POLICY STYLE<sub>q</sub> FOR JAPAN-PRC (FBIS DATA): 1972.

- (3) The measures yield quite different results for the Japan-PRC dyad. The FBIS data show a consistently positive, stable policy style for both Japan→PRC and PRC→Japan. The NYT data show a positive style only in the last two quarters of 1972.

#### RELATIONS: R AND $R_q$ \*

This section discusses the relations measures ( $R$ ,  $R_q$ ) on the same dyads discussed above. Relations measures the two-way event interactions in a dyad. For example, where style considered events directed from the United States to Japan, relations includes these interactions plus those from Japan toward the United States. In this way, the relations measure monitors a dialogue between nations (Rubin, 1973).

#### Japan↔United States

The relations between Japan and the United States appear to be quite similar according to the two sources (Figures 10 and 11). Two differences, however, must be noted. First, the FBIS ( $R_q$ ) shows more positive relations than the NYT ( $R$ ) in the first three time periods, and less positive relations in the fourth period. Second, in the last time period,  $R$  increases slightly while  $R_q$  drops. This difference could be due to the smaller number of events in the NYT data, most of which are positive. The FBIS data also fall for this time period; but the number of negative events remains about the same as in the other time periods, causing  $R_q$  to drop. Though the  $R_q$  measure drops, it remains positive, representing a continued friendly state of relations between Japan and the United States. Despite the fluctuations of each measure, both characterize a friendly state of relations throughout the period.

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\* The data are in Appendix II. The columns labeled "Involv" are "Involvement" or the total number of events occurring between the two nations during the time period.

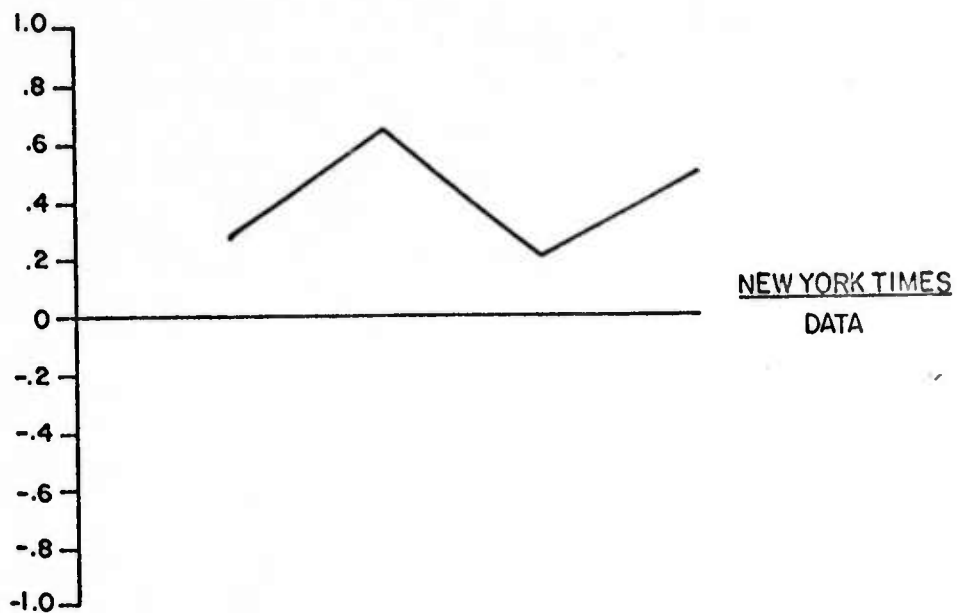


FIGURE 10. RELATIONS FOR JAPAN-US (NEW YORK TIMES DATA): 1972.

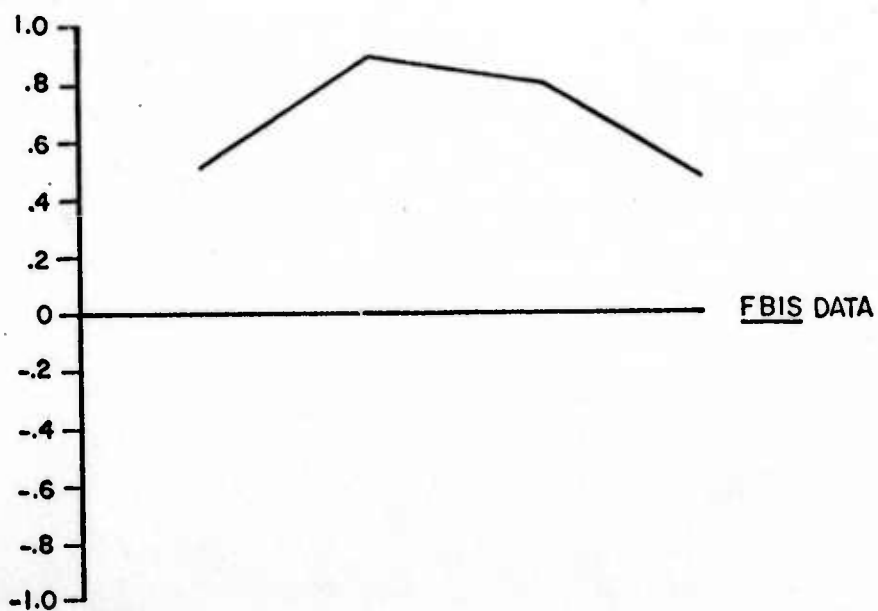


FIGURE 11. RELATIONS<sub>q</sub> FOR JAPAN-US (FBIS DATA): 1972.

### Japan↔Soviet Union

The relationship between Japan and the Soviet Union measured by the NYT and FBIS appears to be quite dissimilar (Figures 12 and 13). The  $R_q$  measure remains below -1.0 for two of the four time periods because of the extraordinary or "q" events that fall within these periods. This occurs despite the overwhelming number of positive events in each of the time periods.

The R measure begins positively, quickly drops to -1.0, and then gradually rises to an even division between positive and negative events in the final quarter. The  $R_q$  measure varies between .88 and below -1.0 for the four time periods; it begins positively, becomes extremely negative, returns to a high positive level, and ends extremely negatively. These oscillations from highly positive to highly negative relations are due to the q events that occur in the second and fourth quarters, pulling the  $R_q$  measure below -1.0.

### Japan↔People's Republic of China

While the actual plots of the Japan↔PRC relations measure are quite different (Figures 14 and 15), a look at the numerical comparisons (Appendix II) shows a similar trend in the two data sources. The number of positive events increases from the first quarter to the later quarters, and conversely the number of negative events declines. As a result, both plots show increasingly friendly relations between Japan and China. The  $R_q$  measure begins with a negative value which becomes positive in the third and fourth quarters. The difference in the two plots is accounted for by the proportion of positive events which is consistently higher for FBIS. This yields a consistently more positive relations measure for  $R_q$  than for R.

### EXAMINING SOME GENERALIZATIONS

The foregoing discussion suggests two generalizations which can be evaluated more fully:

1. FBIS data yield generally more stable indicator results than NYT data when q events are ignored.

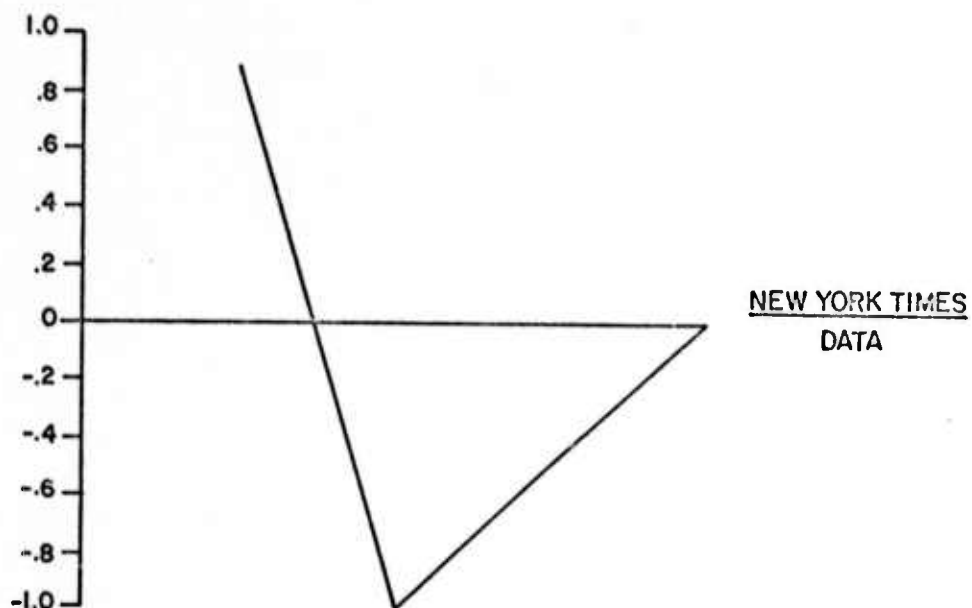


FIGURE 12. RELATIONS FOR JAPAN-USSR (NEW YORK TIMES DATA): 1972.

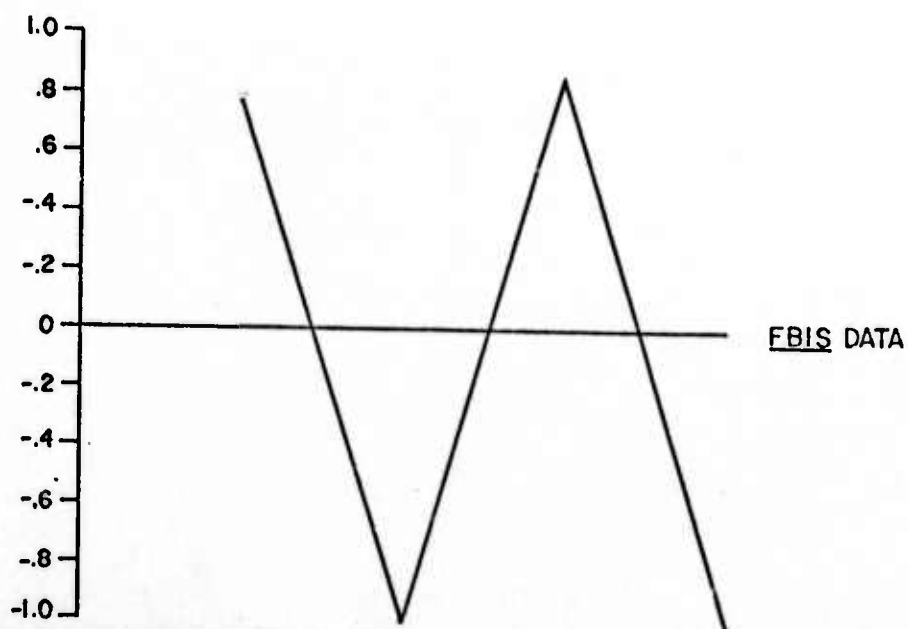


FIGURE 13. RELATIONS<sub>q</sub> FOR JAPAN-USSR (FBIS DATA): 1972.

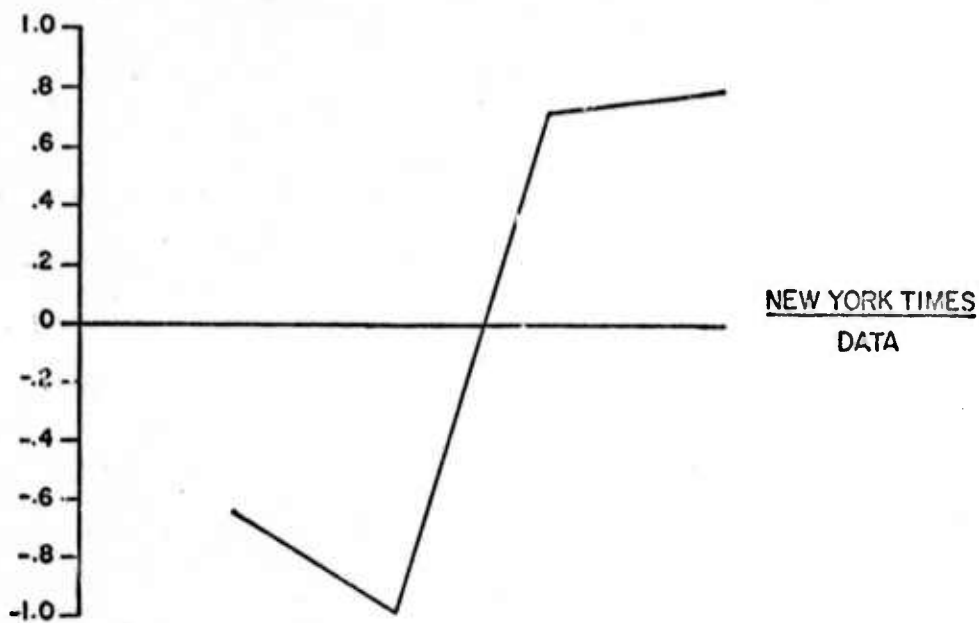


FIGURE 14. RELATIONS FOR JAPAN-PRC (NEW YORK TIMES DATA): 1972.

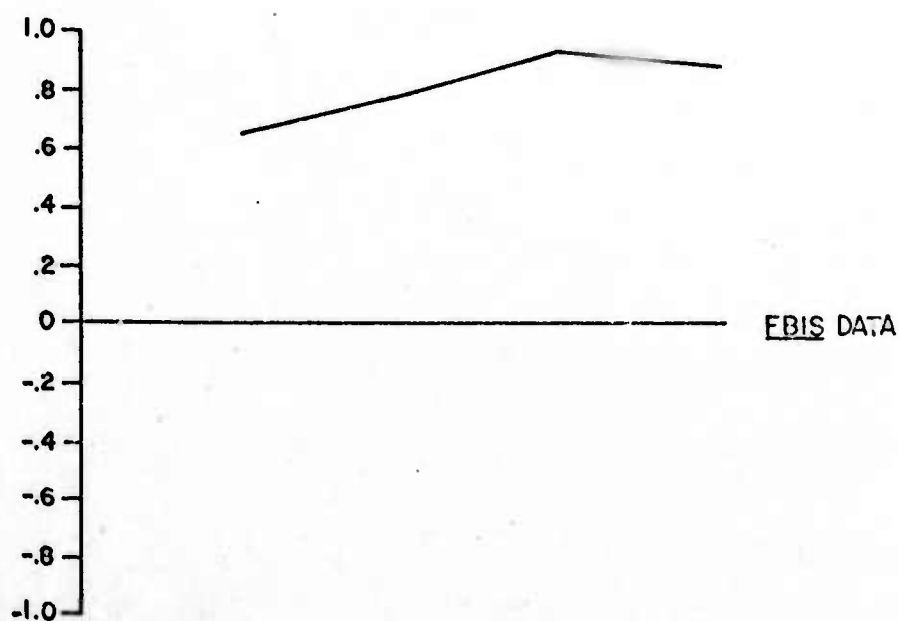


FIGURE 15. RELATIONS<sub>q</sub> FOR JAPAN-PRC (FBIS DATA): 1972.

This generalization is tested by computing the standard deviation of relations scores for each dyad according to each source. Extraordinary (q) events are classified as negative in the calculations. The standard deviations were calculated and summed across each source. The NYT sum is 1.94, while the FBIS sum is .40. The generalization is therefore supported.

2. Indicators applied to the FBIS and NYT compare least favorably when the NYT data are thin.

This generalization is supported by an analysis which sums the absolute differences between the NYT and FBIS policy style indicators for each case. The cases, number of events in each case, and the sum of differences are shown in Table 6.

TABLE 6  
Absolute Differences in Policy Style Indicators

	Japan-U.S.	Japan-PRC	Japan-USSR
# Events in <u>WEIS</u>	80	42	23
Sum of Differences	1.96	6.78	7.19
#in <u>NYT</u> /#in <u>FBIS</u>	.39	.15	.08

Table 6 shows a tendency for the differences between the NYT and the FBIS to increase as the number of WEIS events and the percentage #WEIS/#FBIS decrease.

3. Indicators applied to the FBIS yield generally more positive results than those applied to the NYT.

The generalization is demonstrated by summing the differences, FBIS minus NYT, in the q indicators for the six dyads. The sum is +11.91, which shows that  $R_q$  and  $S_q$  generally are more positive than  $R$  and  $S$ .

Not all of the relative positiveness of  $R_q$  and  $S_q$  is due to the differential treatment of neutral events in the two indicators. The q measures treat all neutral events as positive. When neutral events receive the same treatment in  $R$  and  $S$ , the difference between the FBIS and NYT is still positive (4.48). Thus, some of the relative positiveness of  $R_q$  and  $S_q$  may be due to the presence of a greater percentage of routine events in the larger data collection.

#### Conclusion

The comparisons suggest the following conclusions:

- The  $R_q$  and  $S_q$  indicators applied to FBIS generally are more positive than  $R$  and  $S$  measures applied to the NYT. This is due in part to the treatment of formerly neutral events as positive in the q measures, and in part to the probability that the additional events in FBIS are more routine.
- Except when q events occur,  $R_q$  and  $S_q$  are generally more stable (have less variance) than  $R$  and  $S$ . This is because the occurrence or non-reporting of only a few events has a relatively small effect on FBIS indicators because of the large number of FBIS events.
- Indicators applied to the FBIS and the NYT data compare least favorably where the NYT data are thin.

The FBIS  $R_q$  and  $S_q$  are based on a larger number of events, are more stable, and are more positive than the  $R$  and  $S$  measures from the NYT. This suggests that the FBIS yields indicators that may be more consonant with the images of analysts. Government analysts attend not only to spectacular or unusual events, but also to the more routine interactions between nations. This attention pattern may create a more positive and stable image of relations and policy styles.

# BIBLIOGRAPHY

- AZAR, E., S. COHEN, R. JUKAM, and J. McCORMICK (1972) "The Problem of Source Coverage in the Use of International Events Data." Studies of Conflict and Peace, Report #5, University of North Carolina at Chapel Hill.
- BURROWES, R. (1971) "Mirror, Mirror, On the Wall...: A Comparison of Sources of External Event Data." The MECCA Project. (m meo)
- MOORE, J., D. DEAN, and B. HUGHES (1973) "Quantitative Indicators for Defense Analysis: New Event-Based Indicators." Arlington, Va.: CACI, Inc.
- RUBIN, T. (1973) "International Affairs Indicators for Defense Decision-Making." Arlington, Va.: CACI, Inc.

APPENDIX I  
POLICY STYLE

APPENDIX I  
POLICY STYLE

<u>NYT</u>		JAPAN to USA				
QUARTER	NEG	NEUT	POS	PART	STYLE	
1	4	3	5	12	0.10	
2	1	3	6	10	0.59	
3	6	6	9	21	0.17	
4	1	0	3	4	0.50	

		USA to JAPAN				
QUARTER	NEG	NEUT	POS	PART	STYLE	
1	1	3	5	9	0.53	
2	0	5	6	11	0.71	
3	1	5	3	9	0.31	
1	1	0	3	4	0.50	

<u>FBIS</u>		JAPAN to USA				
QUARTER	NEG	Q	POS	PART	STYLE	
1	13	0	37	50	.46	
2	4	0	27	31	.74	
3	3	0	35	38	.84	
4	7	0	13	20	.30	

		USA to JAPAN				
QUARTER	NEG	Q	POS	PART	STYLE	
1	2	0	12	14	0.71	
2	1	0	23	24	0.92	
3	4	0	11	15	0.47	
4	4	0	11	15	0.47	

<u>NYT</u>		JAPAN to USSR				
QUARTER	NEG	NEUT	POS	PART	STYLE	
1	0	2	5	7	0.80	
2	2	0	0	2	-1.00	
3	0	2	0	2	0.00	
4	1	0	1	2	0.00	

		USSR to JAPAN				
QUARTER	NEG	NEUT	POS	PART	STYLE	
1	0	1	6	7	0.92	
2	0	0	0	0	5.00	
3	1	0	0	1	-1.00	
4	1	0	1	2	0.00	

<u>FBIS</u>		JAPAN to USSR				
QUARTER	NEG	Q	POS	PART	STYLE	
1	3	0	48	51	.88	
2	3	0	38	41	.85	
3	1	0	15	16	.88	
4	2	0	22	24	.83	

		USSR to JAPAN				
QUARTER	NEG	Q	POS	PART	STYLE	
1	4	0	62	66	.88	
2	2	1	45	47	-1.02	
3	1	0	15	16	0.87	
4	4	1	32	36	-1.02	

<u>NYT</u>		JAPAN to CPR				
QUARTER	NEG	NEUT	POS	PART	STYLE	
1	0	2	0	2	0.00	
2	1	0	0	1	-1.00	
3	0	4	5	9	0.71	
4	1	0	3	2	0.50	

CPR to JAPAN						
QUARTER	NEG	NEUT	POS	PART	STYLE	
1	8	1	1	10	-0.74	
2	1	0	0	1	-1.00	
3	0	3	5	8	0.77	
4	0	0	7	7	1.00	

<u>FBIS</u>		JAPAN to CPR				
QUARTER	NEG	Q	POS	PART	STYLE	
1	1	0	18	19	.89	
2	0	0	17	17	-1.00	
3	0	0	57	57	1.00	
4	1	0	24	25	.92	

CPR to JAPAN						
QUARTER	NEG	Q	POS	PART	STYLE	
1	7	0	17	24	.58	
2	6	0	25	31	.61	
3	1	0	60	61	.97	
4	1	0	40	41	.95	

APPENDIX II  
RELATIONS

APPENDIX II  
RELATIONS

<u>NYT</u>	<u>JAPAN with USA</u>				
QUARTER	NEG	NEUT	POS	INVOLV	RELATIONS
1	5	6	10	21	.28
2	1	8	12	21	.65
3	7	11	12	30	.20
4	2	0	6	8	.50

<u>FBIS</u>	<u>JAPAN with USA</u>				
QUARTER	NEG	Q	POS	INVOLV	RELATIONS Q
1	15	0	49	64	.53
2	5	0	50	55	.82
3	7	0	46	53	.74
4	11	0	24	35	.37

<u>NYT</u>	<u>JAPAN with USSR</u>				
QUARTER	NEG	NEUT	POS	INVOLV	RELATIONS
1	0	3	11	14	.88
2	2	0	0	2	-1.00
3	1	2	0	3	-.50
4	2	0	2	4	.00

<u>FBIS</u>	<u>JAPAN with USSR</u>				
QUARTER	NEG	Q	POS	INVOLV	RELATIONS Q
1	7	0	110	117	.88
2	5	1	83	89	-1.01
3	2	0	30	32	.88
4	6	1	54	60	-1.02

<u>NYT</u>	<u>JAPAN with PRC</u>				
QUARTER	NEG	NEUT	POS	INVOLV	RELATIONS
1	8	3	1	12	-.67
2	2	0	0	2	-1.00
3	0	7	10	17	.74
4	1	0	10	11	.82

<u>FBIS</u>	<u>JAPAN with CPR</u>				
QUARTER	NEG	Q	POS	INVOLV	RELATIONS Q
1	8	0	35	43	.63
2	6	0	42	48	.75
3	1	0	117	118	.98
4	2	0	64	66	.94

# C.A.C.I.

VI

WASHINGTON, D.C. OFFICES

CODEBOOK FOR  
DEFENSE EVENTS CODING SCHEME FOR  
DOMESTIC AND INTERNATIONAL EVENTS

Vivian Moore

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## INTRODUCTION

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This report presents the Defense Events Coding Scheme (DECS) for coding international and domestic events. The coding system was developed to (1) increase the detail in international events categories in the World Event/Interaction Survey (WEIS) coding project; (2) add new components to the WEIS coding system (e.g., subnational actors and targets); and (3) develop an initial list of domestic events categories. The international events in DECS comprise the 63 WEIS events categories plus about 40 new international events. The domestic events were selected from among several domestic events coding schemes and included some newly developed domestic events categories. The coding system was applied to three years (1971-1973) of Japanese interactions reported in the Foreign Broadcast Information Service Bulletin (FBIS).

The report is divided into four sections. Section I describes revisions of the original Defense Events Coding Scheme; Section II, the components of DECS; Section III, the rules for coding; and Section IV, procedures for writing textual abstracts for each event coded. In addition, there are four appendixes. Appendix I contains definitions and examples for every event category; Appendix II reports on an initial test of inter-coder reliability; Appendix III describes particular aggregations of the data available in the data retrieval program; and Appendix IV instructs the user on how to use the retrieval program to retrieve the Japan FBIS data.

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## I. EXPLANATION OF REVISIONS

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### DEFINITION OF AN EVENT

The original Defense Events Coding Scheme (DECS) defined an event as "any distinct, human activity." This definition was a departure from definitions used in other events coding schemes in that it (1) encompassed a much larger range of behavior, and (2) had no theoretical or historical basis. Several members of the Indicator Project argued that a more precise definition, rooted in the events literature, would be more useful for analytic purposes. Consequently, the author reviewed major international and domestic events coding schemes to establish a viable definition of an event.

### International Events

An "event," specifically an "international event," has been variously defined. Charles McClelland (World Event/Interaction Survey) considers an event a specific official statement or action that crosses a national boundary (Fitzsimmons, 1969; Truesdell, 1973). Edward Azar (Conflict and Peace Data Bank) is more general in his definition. He considers an event an overt action that may affect the behavior of other international system actors (1970). Patrick McGowan (Comparative Study of Foreign Policy) similarly notes that an action is taken to affect the behavior of the recipient (1970). Charles Hermann (CREON) defines an international event as "purposeful behavior which may be either verbal or nonverbal and which is initiated by some human actor who represents the executive of a state" (1970).

Drawing upon these definitions an international event must, for the purposes of DECS, satisfy the following criteria:<sup>1</sup>

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<sup>1</sup> These criteria are mutually exclusive. For example, an event that satisfies the third criterion need not involve an official government spokesman (criterion 1).

1. Occur across national boundaries (between two or more nations, international organizations, or groups), or
2. Involve at least one official government spokesman or group (e.g., President, Congress), or
3. Constitute a political relationship between two or more actors in the international system.

### Domestic Events

A review of the literature of domestic conflict suggests a number of approaches to defining an "internal" or "domestic event." Taylor and Hudson (1970) and the Feierabends (1968) contend that domestic events involve the political system in one way or another. Taylor and Hudson suggest that political structure, political participation, and the relationship between the rulers and the ruled are important dimensions of domestic political behavior, or "events." James Rosenau (1968) posits three dimensions of domestic political behavior--internal war, authority (e.g., roles), and personnel and structural conflicts (e.g., internal power conflicts). John Sullivan (1969) agrees that "political" or "ideological" disputes are important phenomena that must be considered.

One other significant dimension is that of anomic versus organized activity. Charles Tilly (1973) suggests that political turmoil may be anomic (e.g., riots) or tactical (e.g., terrorist bombings). Both the Feierabends and Taylor and Hudson agree with this basic dichotomy.

Drawing upon these definitions a domestic event must, for the purposes of DECS, satisfy the following criteria:<sup>2</sup>

1. Involve the national government directly, that is, the event as reported must pertain to the executive structure (e.g., governmental changes, changes in personnel, laws), or

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<sup>2</sup> Again, these criteria are mutually exclusive.

2. Constitute political participation,<sup>3</sup> either anomic or structural, by any actor, including aggregates such as political parties and lobbying organizations, or
3. Constitute a relationship between the rulers and the ruled in the political system (e.g., declaration of martial law, lifting of restrictions).

#### Non-Interactive Events

Non-interactive events are occurrences that may be historically important but have either no specific actor or target such as the death of a president or the occurrence of a natural disaster. These events are coded "0" in the actor or target column, depending upon which is not relevant.

#### EVENT CODES

The original coding scheme was designed to develop a more detailed list of event codes, and to bring together event codes that could be applied to both international and domestic actions. There were several problems with this approach.

First, the 128 DECS codes were derived partly from WEIS and from ad hoc selection. The final original coding scheme, however, was a relatively complete departure from WEIS and other existing events coding schemes since it had a different overall structure and contained different categories and numeric codes.

Since WEIS had been used from the inception of the Indicator Project, it seemed reasonable to increase its detail rather than to develop a totally new system that would not be comparable to any other. An increase in detail in an already existing system would make it possible to compare the systems to determine whether the increase is actually necessary and useful for analysis. Therefore, the following rules were used in the revision of DECS

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<sup>3</sup> Political participation is any action aimed at influencing government policy, behavior, structure, or participants.

international events categories:

1. When a DECS event could be subsumed under an already existing WEIS event category, the DECS event was eliminated.
2. When a DECS event could be subsumed under a WEIS combined event category, but no event code fit the event, a new code under the appropriate WEIS category was created for the event.
3. When no WEIS combined event category fit the DECS event, a new combined event category plus event categories under that combined event category was created for the DECS event.

In this way, 25 new events were added to the WEIS system from the DECS codes. This represents a 40 percent increase in detail in the WEIS coding scheme, an increase that should be more than adequate for testing whether more detail in coding actually is desirable and workable.

The total number of international events categories in the revised scheme is 84. It seems more reasonable to work with a 40 percent increase in detail on an already existing and tested system than to use a completely untested system that represents a 100 percent increase in detail. If the WEIS system (as revised) indicates that more detail would be useful after being tested, then that change could be made in the coding system.

The second problem was that DECS did not separate the international and domestic events domains. Each event code theoretically could be applied to either international or domestic situations. This assumes that a particular international event is comparable to the same domestic event. For example, a meeting of Israeli and Egyptian negotiators would be comparable to a Congressional committee meeting.

The literature concerning international and domestic events domains presents evidence that these domains are separate and generally unrelated. Rummel (1963) and Tanter (1966) questioned the commonly held notion that the two domains are related. Their analyses indicated that the domestic and external politics of nations are largely independent of one another. Burrowes and Spector (1972) factor analyzed Syrian external and domestic events and presented further evidence confirming the independence of the two domains.

Three major studies that code both domestic and external events separate the two domains. These studies are:

- Robert Burrowes, Middle East Conflict and Cooperation (MECCA) Project
- Rudolph Rummel, Dimensionality of Nations (DON) Project (also Tanter, 1966; Wilkenfeld, 1972; Banks, 1972)
- Charles Taylor and Michael Hudson, World Handbook of Political and Social Indicators, II

It seems more sensible to rely on past-tested systems of coding domestic events than to operate with an entirely new, untested category system, at least for an initial test of a new coding scheme. Therefore, the following rules were used to develop a category system for domestic events separate from international events:

1. Categories were selected from the following major domestic events studies:
  - (a) Robert Burrowes, MECCA Project
  - (b) John Collins, Foreign Conflict Behavior and Domestic Disorder in Africa
  - (c) Ivo and Rosalind Feierabend, Political Events Project
  - (d) Rudolph Rummel, DON Project
  - (e) Charles Taylor and Michael Hudson, World Handbook of Political and Social Indicators, II
2. The various categories were combined and identical categories eliminated.
3. Combined events categories from the DECS international events scheme were added where the categories did not match already selected domestic codes.
4. Slightly more detail was added by the authors.

The addition of combined events categories enriched the domestic events detail, particularly in the areas of verbal cooperation and verbal conflict. There are 75 domestic events categories.

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## II. CODING SYSTEM

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### COMPONENTS

The Defense Events Coding Scheme consists of two parts: the analytic/numeric codes, and the textual narrative of the events. Coders select events, assign them numeric codes, then write a brief textual description of each coded event.

Analytic components of DECS are as follows:

- Date  
The day, month, and year in which the event is reported to have occurred.
- Actor  
International actor is the country, group, region, or international organization that initiates the event.  
Subnational actor is the person or group initiating the event.
- Event  
Character: international, domestic, or non-interactive.  
Event: type of event.  
Length: discrete or continuous.
- First (direct) target  
International target is the country, group, region, or international organization that receives the event.  
Subnational target is the person or group at whom the event is directed.
- Second (indirect) target  
International target is any country, group, region, or international organization other than the first target about which the event occurs.
- Subject  
A general topic of the coded event.
- Issue  
A particular issue and issue position associated with the event.
- Source  
A code for the data source.

ALL CODES ARE RIGHT JUSTIFIED, THAT IS, FOR EACH CATEGORY, THE ANALYTIC CODE MUST END IN THE FURTHEST RIGHT-HAND COLUMN OF THAT CATEGORY. For example, there are nine columns for the subject codes. Each subject code is three digits. If there are only two subject codes, the codes would appear in columns 36-41. Below is a list of the categories and columns of each code.

<u>Coded Item</u>	<u>Column</u>
Day	1-2
Month	3-4
Year	5-6
International Actor	7-9
Subnational Actor	11-13
Character of Event	14
Event Code	15-17
Length of Event	18
1st Target (International)	19-21
1st Target (Subnational)	23-25
2nd Target (International)	26-28
2nd Target (Subnational)	30-32
Subject	33-35, 36-38, 39-41
Issue	46-49
Issue Position	50
Source	51

A sample code sheet is shown on the following page.



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### III. CODING RULES

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#### DATE

The date is the specific date on which the event occurred. It includes the day, month, and year in which the event is reported. The following codes are used for the date.

Day = 01-31

Month = 01-12

Year = 00-99 (last two digits of the year)

Example: January 3, 1972 = 030172

If only the month and year are known, the day is coded "00." If only the quarter or semi-annual period in which the event occurred is mentioned, the month is coded 8Y where Y is the quarter (i.e., 1,2,3 or 4) of the year Y; or 9X, where X is the first or second 6-month period (i.e., 1,2) of the year.

If there is insufficient information to specify the day, month, quarter, or semi-annual period of an event, "0" and "0" will be entered in both columns. DURING CODING, THE INABILITY TO ENTER A SPECIFIC CODE FOR ANY OF THE CATEGORIES WILL BE DENOTED BY A ZERO (0) ON THE CODE SHEET IN THE FURTHEST RIGHT-HAND COLUMN OF THE SPECIFIC CATEGORY.

#### INTERNATIONAL ACTOR

The international actor is the country, group, region, or international organization that initiates the action. THERE MUST ALWAYS BE A CODE FOR INTERNATIONAL ACTOR. Table 1 contains a list of these actors that includes:

- All independent countries
- Selected major colonies/protectorates

- Selected intergovernmental organizations
- Selected "other entities" and regions<sup>4</sup>

The coder should determine the nationality of the entity that is performing the event. Occasionally, questions of mixed nationality occur (e.g., a journalist or businessman who is a citizen of nation X works for a news agency or business which is of a different nationality). In such cases, the nationality of the organization for which the individual works is coded unless he engages in activities or events that are expressly and obviously not being carried out as part of the program of his employer. Employees of an international organization will normally be presumed to be acting in its behalf unless it is explicitly known that such is not the case.

TABLE 1  
INTERNATIONAL ACTOR/TARGET CODE LIST  
(Alphabetical)

<u>CODE</u>	<u>ENTITY</u>	<u>ABBR.</u>	<u>CODE</u>	<u>ENTITY</u>	<u>ABBR.</u>
<u>Independent Countries</u>					
700	Afghanistan	AFG	053	Barbados	BAR
339	Albania	ALB	211	Belgium	BEL
615	Algeria	ALG	266	Berlin/East	EBE
232	Andorra	AND	267	Berlin/West	WBE
160	Argentina	ARG	760	Bhutan	BHU
900	Australia	AUL	145	Bolivia	BOL
305	Austria	AUS	571	Botswana	BOT
695	Bahrain	BAH	140	Brazil	BRA
765	Bangladesh	BGD	355	Bulgaria	BUL

<sup>4</sup> Regions are used when no one specific actor (or target) is applicable.

TABLE 1 (Cont.)

<u>CODE</u>	<u>ENTITY</u>	<u>ABBR.</u>	<u>CODE</u>	<u>ENTITY</u>	<u>ABBR.</u>
775	Burma	BUR	530	Ethiopia	ETH
516	Burundi	BUI	375	Finland	FIN
811	Cambodia	CAM	220	France	FRN
471	Cameroun	CAO	980	Fiji	FIJ
020	Canada	CAN	481	Gabon	GAB
482	Central African Republic	CEN	420	Gambia	GAM
780	Ceylon (now Sri Lanka)	CEY	265	Germany/Dem. Rep.	GME
483	Chad	CHA	255	Germany/Fed. Rep.	GMW
155	Chile	CHL	452	Ghana	GHA
710	China, People's Republic of	CHN	350	Greece	GRC
713	China, Republic of	CHT	090	Guatemala	GUA
100	Columbia	COL	438	Guinea	GUI
484	Congo (Brassaville)	COP	110	Guyana	GUY
490	Congo (Kinshasa) (now Zaire)	CON	041	Haiti	HAI
094	Costa Rica	COS	091	Honduras	HON
040	Cuba	CUB	310	Hungary	HUN
352	Cyprus	CYP	395	Iceland	ICE
315	Czechoslovakia	CZE	750	India	IND
434	Dahomey	DAH	850	Indoresia	INS
390	Denmark	DEN	630	Iran	IRN
042	Dominican Rep.	DOM	645	Iraq	IRQ
130	Ecuador	ECU	205	Ireland	IRE
651	Egypt (UAR)	UAR	666	Israel	ISR
092	El Salvador	ELS	325	Italy	ITA
440	Equitorial Guinea (includes Fernando Po)	GUE	437	Ivory Coast	IVO
			051	Jamaica	JAM
			740	Japan	JAP
			663	Jordan	JOR
			501	Kenya	KEN
			731	Korea/North	KON
			732	Korea/South	KOS

TABLE 1 (Cont.)

<u>CODE</u>	<u>ENTITY</u>	<u>ABBR.</u>	<u>CODE</u>	<u>ENTITY</u>	<u>ABBR.</u>
690	Kuwait	KUW	135	Peru	PER
812	Laos	LAO	840	Philippines	PHI
660	Lebanon	LEB	290	Poland	POL
570	Lesotho	LES	235	Portugal	POR
450	Liberia	LIB	696	Qatar	QAT
620	Libya	LBY	552	Rhodesia	RHO
223	Liechtenstein	LIC	360	Rumania	RUM
212	Luxemburg	LUX	517	Rwanda	RWA
580	Malagasy	MAG	331	San Marino	SAN
553	Malawi	MAW	670	Saudi Arabia	SAU
820	Malaysia	MAL	433	Senegal	SEN
782	Maldives	MAD	451	Sierra Leone	SIE
432	Mali	MLI	830	Singapore	SIN
338	Malta	MLT	520	Somalia	SOM
590	Mauritius	MAR	560	South Africa	SAF
435	Mauritania	MAU	681	South Yemen	SYE
070	Mexico	MEX	230	Spain	SPN
221	Monaco	MOC	625	Sudan	SUD
712	Mongolia	MON	572	Swaziland	SWA
600	Morocco	MOR	380	Sweden	SWD
698	Muscat and Oman	MOM	225	Switzerland	SWZ
921	Nauru	NAU	652	Syria	SYR
790	Nepal	NEP	510	Tanzania	TAZ
210	Netherlands	NTH	800	Thailand	TAI
920	New Zealand	NEW	461	Togo	TOG
093	Nicaragua	NIC	052	Trinidad-Tobago	TRI
436	Niger	NIR	616	Tunisia	TUN
475	Nigeria	NIG	640	Turkey	TUR
385	Norway	NOR	500	Uganda	UGA
770	Pakistan	PAK	365	USSR	USR
095	Panama	PAN	675	United Arab Emirates	UAE
150	Paraguay	PAR	200	United Kingdom	UNK

TABLE 1 (Cont.)

<u>CODE</u>	<u>ENTITY</u>	<u>ABBR.</u>	<u>CODE</u>	<u>ENTITY</u>	<u>ABBR.</u>
002	USA	USA	817	Vietnam/South	VTN
439	Upper Volta	UPP	990	Western Samoa	WSM
165	Uruguay	URU	678	Yemen	YEM
328	Vatican	VAT	345	Yugoslavia	YUG
101	Venezuela	VEN	551	Zambia	ZAM
816	Vietnam/North	VTN			

Colonies or Protectorates

555	Angola (Port.)	ANG	557	Mozambique (Port.)	MOZ
035	Bahamas (Br.)	BAS	445	Portuguese Guinea	POG
030	Bermuda (Br.)	BER	556	Southwest Africa	SAW
085	British Honduras	BHO	430	Spanish Sahara	SPS
115	French Guiana	FGU	996	All other Colonies/ Protectorates	
720	Hong Kong (Br.)	HOK			
721	Macao (Port.)	MAC			

International Organizations or Multilateral Groups of Nations

198	Alliance for Progress	AFP
699	Arab League	ARL
397	European Economic Community (EEC)	EEC
398	European Free Trade Association (EFTA)	EFT
986	International Monetary Fund (IMF)	IMF
396	North Atlantic Treaty Organization (NATO)	NAT
599	Organization for African Unity (OAU)	OAU
199	Organization of American States (OAS)	OAS
992	Southeast Asia Treaty Organization (SEATO)	SEA
399	United Nations (only)	UNO
394	Warsaw Pact	WAR
985	World Bank (IBRD, IDA)	WBK

TABLE 1 (Cont.)

<u>CODE</u>	<u>ENTITY</u>	<u>ABBR.</u>
818	Vietcong	VCG
697	Arab commando groups (Palestine Liberation Organization, Al Fatah)	PLO
991	International terrorist groups	TER
993	International Red Cross	IRC
997	All other international organizations	INT
998	Any other multilateral group	MLG
999	Not stated, unidentified target	NSC

Region Codes

025	North America/North Atlantic	NAM
060	Caribbean	CAR
099	Central America	CEA
190	South America	SAM
270	West Europe	WEU
280	East Europe	EEU
340	Turkey, Greece, Iran, Cyprus	CTO
379	Scandinavia	SCA
498	Black Africa	BLA
499	White Africa	WHA
692	North Africa	NOA
693	Persian Gulf	PER
694	Arab World	ARA
715	South Asia	SAS
819	Southeast Asia	SES
825	South Pacific	SOP
970	Arctic	ARC
971	Antarctic	ANA
972	Pacific Ocean	PAC
973	Atlantic Ocean	ATL

TABLE 1 (Cont.)

<u>CODE</u>	<u>ENTITY</u>	<u>ABBR.</u>
974	Indian Ocean	INO
975	Mediterranean	MED
976	North Sea	NOS
977	China Sea	CHS
978	Baltic	BAI
979	Other European Waters	OEW

SUBNATIONAL ACTORS

This dimension consists of a three-digit subnational actor code listed in Table 2. First the coder identifies who within a country is performing the event and then selects the code for one of the subnational entities listed in Table 2. This list contains over 200 codes.

TABLE 2  
SUBNATIONAL ACTORS001 NATION020 UNIDENTIFIED PERSON OR GROUP IN NATIONAL GOVERNMENTEXECUTIVE

- 100 Unidentified person or group
- 101 Chief or head of state (if distinct from chief of government)
- 110 Chief of government
- 111 Personally
- 119 Other chief of government (e.g., spokesmen for, personal aides to, representatives of)
- Council of ministers or cabinet
- 120 Unidentified person or group
- 121 Prime Minister or chairperson (if distinct from chief of government)

TABLE 2 (Cont.)

- 125 Other officers  
 129 Other council of ministers

FOREIGN MINISTRIES, DEPARTMENTS, OR AGENCIES

- 150 Unidentified person or group  
 Foreign affairs or foreign policy ministry  
 160 Unidentified person or group  
 161 Secretary or minister of foreign affairs; spokesmen  
 165 Foreign ambassadors  
 169 Other foreign affairs  
 170 Foreign trade ministry (if distinct)

DEFENSE MINISTRY

- 200 Unidentified person or group  
 201 Secretary or minister of defense and spokesmen  
 210 Army, Army staff  
 230 Navy, Navy staff  
 250 Air Force, Air Force staff  
 270 Military intelligence  
 272 Mixed or undifferentiated forces

OTHER FOREIGN MINISTRIES, DEPARTMENTS, AND AGENCIES

- 281 Foreign intelligence, non-military  
 285 Border security forces  
 299 All other foreign ministries

DOMESTIC MINISTRIES OR DEPARTMENTS

- 300 Unidentified person or group  
 302 Agriculture and food  
 304 Economics, finance, commerce, trade  
 306 Health, education, welfare  
 308 Transportation/communications  
 310 Internal security  
 312 Justice

TABLE 2 (Cont.)

- 313 Natural resources
- 314 Other domestic ministries
- 317 National police

#### GOVERNMENT ENTERPRISES

- 320 Unidentified person or group
- 322 Agricultural, fisheries
- 324 Industrial
- 326 Trade and science
- 329 Mixed and other

#### 399 OTHER EXECUTIVE BRANCH

#### LEGISLATIVE

- 400 Unidentified person or group
- 402 Officers of
- 404 Committees and commissions
- Regionally or organizationally representative legislature
- 420 Unidentified person or group
- 422 Officers of
- 424 Committees and commissions
- Population representative legislature
- 440 Unidentified person or group
- 442 Officers of
- 444 Committees and commissions
- 479 Other national legislative organizations

#### JUDICIAL

- 480 Unidentified person or group
- 482 Supreme Court, highest tribunal
- 489 Other

#### 499 MIXED AND OTHER NATIONAL GOVERNMENT

#### REGIONAL GOVERNMENT

TABLE 2 (Cont.)

500	Unidentified person or group
510	Executive
530	Legislative
578	Judicial
579	Mixed and other regional government

LOCAL GOVERNMENT

580	Unidentified person or group
582	Executive
588	Legislative
594	Judicial
599	Mixed and other local government

ORGANIZATIONS

700	Parties
701	Unidentified person or group
702	Ruling party
703	Leftist/Socialist/Communist
704	Periodic congresses or conventions
705	National or central committees
706	Chairman, spokesman, delegation
707	Other
708	Centrist
709	Periodic congresses or conventions
710	National or central committees
711	Chairman, spokesman, delegation
712	Other
713	Rightist/Fascist
714	Periodic congresses or conventions
715	National or central committees
716	Chairman, spokesman, delegation
717	Other
718	Opposition party
719	Leftist/Socialist/Communist

TABLE 2 (Cont.)

720	Periodic congresses or conventions
721	National or central committees
722	Chairman, spokesman, delegation
723	Other
724	Centrist
725	Periodic congresses or conventions
726	National or central committees
727	Chairman, spokesman, delegation
728	Other
729	Rightist/Fascist
730	Periodic congresses or conventions
731	National or central conventions
732	Chairman, spokesman, delegation
733	Other
734	Ruling coalitions
735	Leftist/Socialist/Communist
736	Periodic congresses or conventions
737	National or central committees
738	Chairman, spokesman, delegation
739	Other
740	Centrist
741	Periodic congresses or conventions
742	National or central committees
743	Chairman, spokesman, delegation
744	Other
745	Rightist/Fascist
746	Periodic congresses or conventions
747	National or central committees
748	Chairman, spokesman, delegation
749	Other
750	Opposition coalitions
751	Leftist/Socialist/Communist
752	Periodic congresses or conventions

TABLE 2 (Cont.)

753	National or central committees
754	Chairman, spokesman, delegation
755	Other
756	Centrist
757	Periodic congresses or conventions
758	National or central committees
759	Chairman, spokesman, delegation
760	Other
761	Rightist/Fascist
762	Periodic congresses or conventions
763	National or central committees
764	Chairman, spokesman, delegation
765	Other

766 Other

768 INSURGENTS AND POLITICAL TERRORISTS

769 OTHER ORGANIZATIONS

ECONOMIC ORGANIZATIONS

Producers of goods and services

770	Unidentified person or group
772	Agricultural, fishing
774	Industrial

Trade and service

776	Unidentified person or group
777	Scientific and technical
781	Artistic
785	Educational

Non-governmental media

790	Unidentified person or group
791	Broadcast
793	Press
798	Other
799	Other

TABLE 2 (Cont.)

810 Trade or labor unions

820 Trade associations

830 OTHER ECONOMIC ORGANIZATIONS

RELIGIOUS ORGANIZATIONS

850 Unidentified person or group

852 Christian

853 Catholic

854 Protestant

856 Jewish

858 Hindu

860 Buddhist

862 Moslem

863 Other

870 ETHNIC/TRIBAL ORGANIZATIONS

875 WOMEN'S ORGANIZATIONS

891 STUDENTS' ORGANIZATIONS

892 FOREIGN REFUGEE/RESIDENT ORGANIZATIONS

893 CULTURAL, FRIENDSHIP ASSOCIATIONS, GROUPS

899 OTHER ORGANIZATIONS

INDIVIDUALS AND GROUPS OF INDIVIDUALS NOT CONSTITUTING A FORMAL ORGANIZATION

POLITICAL

900 Pro-government

901 Leftist/Socialist/Communist

902 Centrist

903 Rightist/Fascist

904 Opposition

905 Leftist/Socialist/Communist

906 Centrist

TABLE 2 (Cont.)

907 Rightist/Fascist

908 Other

ECONOMIC/OCCUPATIONAL

912 Agricultural, fishing

913 Industrial

914 Workers in general

915 Management

## Trade and Service

916 Scientists and engineers

918 Artists, writers, musicians

920 Educational (administrative, teachers)

922 Press

929 Other

RELIGIOUS

930 Christian

931 Catholic

932 Protestant

945 Jewish

937 Hindu

939 Buddhist

941 Moslem

949 Other

951 ETHNIC/TRIBAL955 RACIAL958 WOMEN971 YOUTH UNDER 20973 UNDIFFERENTIATED "INTELLIGENCIA"975 APPARENTLY UNORGANIZED AND SPONTANEOUS976 PEOPLE AS A WHOLE; PUBLIC IN GENERAL

TABLE 2 (Cont.)

981	<u>INDIVIDUALS</u>
983	<u>FORMER "HIGH-RANKING" GOVERNMENT OFFICIALS</u>
985	<u>SPECIFIC AREA OR REGION</u>
998	<u>FOUR OR MORE PERSONS/GROUPS</u>
999	<u>OTHER, NOT SPECIFIED TARGET</u>

EVENT CODES

Event codes consist of three parts: the character of the event, the type of event, and the length of the event. The character of the event is a 1-digit code that specifies whether the event is international, non-interactive, or domestic. Coders select the character code, then select the event code under the appropriate character (international, non-interactive, or domestic). (See Table 3.) INTERNATIONAL EVENTS ARE ALWAYS CODED FROM INTERNATIONAL EVENT CODES (011-236); NON-INTERACTIVE EVENTS FROM NON-INTERACTIVE EVENT CODES (401-423); AND DOMESTIC EVENTS FROM DOMESTIC EVENT CODES (601-751).

<u>Code</u>	<u>Character of Event</u>
1	<u>International</u> An international event is one that occurs across national boundaries, that is, involving two or more nations (see pp. 1-2).
2	<u>Domestic</u> A domestic event is one that occurs within national boundaries, that is, involving two or more groups or individuals within one nation (see pp. 2-3).
3	<u>Non-Interactive</u> A non-interactive event is a specific historical event that does not involve two parties, e.g., the death of a political figure (see p. 3).

There are several important rules that must be followed in using DECS. First, an event is never coded until it actually happens. Often a source will announce that something will happen in the future such as President Nixon's visit to China. The actual event, an official visit, cannot be

coded until it actually occurs. Also, data sources often announce that prisoners will be released or an important meeting will be held tomorrow. Again, the event is coded only when it actually occurs.

Second, if there is a speech to a domestic person or group about an international issue, the event is coded as international (character code) unless the event is in response to a previous act by a domestic target. If the event is coded as a domestic event, the international actor is coded as the nation in which the event occurs, and the first international target is coded "0."

Conventions have developed in the World Event/Interaction Survey (WEIS) for coding the interactions of a group of nations (Truesdell, 1973). For example, if the United States, England, France, and the Soviet Union sign agreements on Berlin access, there are four separate actor codes but only one first target code which is 998. Thus four events are coded, one for each interaction targeted to 998. It would take too long and too much computer storage to code each actor with each of the four first targets--a total of 12 codes versus 4. Usually, if the group involves four or more actors or targets, the 998 code is used. Also, if a national member of an international organization speaks, proposes, or criticizes, that member's action is coded only if the whole organization or the majority is mentioned as the actor/target. For example, when the United States Ambassador to the U.N. criticizes the Soviet Union at the U.N., the United States is the actor, not the United Nations. However, if a majority Security Council or General Assembly resolution criticizes the Soviet Union, the U.N. is the actor. If dissenting members are mentioned, they can be coded as rejecting the U.N. action. If the United States Ambassador to NATO presents a proposal to the Soviets, the United States is the actor. But if the United States Ambassador to NATO acts as the spokesman for NATO (it must be mentioned in the news article as a joint action of NATO), NATO is the actor. In short, if the international organization is mentioned as the actor or target, its code is used; however, if a nation-member is explicitly mentioned as the speaker, dissenter, or proposer and the action is solely the nation's action, the nation's code is used.

Although it is impossible for a nation to be both actor and target, it is common to have the same international organization as both actor and target. For example, the U.N. can meet, propose actions to itself and agree on resolutions. It is not necessary to double-code such one-entity actions as is necessary when two nations meet or agree. Rather, single-entity actions are coded only once with the same code as actor and first target. Even when two different U.N. committees, such as UNESCO (United Nation's Educational, Scientific and Cultural Organization) and WHO (World Health Organization) meet, the event is still coded once. However, if two different organizations (two different actor/target codes) meet, the event must be double-coded so that our computer programs can pick up the two different actors and targets. The following events must be double-coded: meet with; visit (code the visit and the host); grant diplomatic recognition; agree; military engagement.<sup>5</sup>

Table 3 presents the revised event codes for DECS. The codes are organized into international events, non-interactive events, and domestic events. As in WEIS, there are combined events (major categories) with event categories under each. Only the event categories are coded (the 3-digit codes).

TABLE 3  
EVENT CODES

#### INTERNATIONAL EVENTS

##### 1. YIELD

- 011. Surrender; yield to order; submit to arrest
- 012. Yield position; retreat; evacuate; surrender possessions
- 013. Admit wrongdoing; retract statement
- 014. Apologize\*
- 015. Yield to pressure from; demands of

---

<sup>5</sup> More detailed explanations of the exact meaning and procedure for coding events are presented in Appendix I.

\* Starred events are event codes added to the WEIS system from DECS.

TABLE 3 (Cont.)

2. COMMENT

- 021. Explicit decline to comment
- 023. Comment on situation; express hope, concern, fear
- 025. Explain policy or future position

3. CONSULT

- 031. Meet with at neutral site; send note
- 032. Visit; go to
- 033. Receive visit; host

4. APPROVE

- 041. Praise, hail, applaud; express condolences, ceremonial greetings, thanks
- 042. Endorse other's policy or position; give verbal support
- 043. Physically demonstrate in support of\*

5. PROMISE

- 051. Promise own policy support
- 052. Promise material support
- 053. Promise other future support action
- 054. Assure, reassure
- 055. Promise information to\*

6. GRANT

- 061. Express regret
- 062. Give state invitation
- 063. Grant asylum
- 064. Grant privilege, diplomatic recognition, de facto relations; send ambassador to unoccupied post
- 065. Suspend negative sanctions; truce; cease-fire
- 066. Release and/or return persons or property
- 067. Increase number of consulates in\*
- 068. Establish a legation in\*
- 069. Open an embassy in; increase embassy personnel\*

TABLE 3 (Cont.)

7. REWARD

- 071. Extend economic aid (gift and/or loan)
- 072. Extend military assistance; joint military exercise
- 073. Give other assistance
- 074. Give non-threatening (friendly) notice of impending or possible harm to\*

8. AGREE

- 081. Make substantive agreement
- 082. Agree to future action or procedure; agree to meet, to negotiate; accept state invitation
- 083. For an agreement to go into effect\*
- 084. For an agreement to expire

9. REQUEST

- 091. Ask for information
- 092. Ask for policy assistance; seek help
- 093. Ask for material assistance
- 094. Request action; call for; ask for asylum
- 095. Entreat; plead for; appeal to
- 096. Request granting of rights and/or privileges

10. PROPOSE

- 101. Offer proposal
- 102. Urge or suggest policy or action

11. REJECT

- 111. Turn down proposal; reject protest, demand, threat, etc.
- 112. Refuse; oppose; refuse to allow; exclude; fail to reach agreement
- 113. Refuse to give information to\*
- 114. Refuse to give certain rights and privileges to\*
- 115. Refuse to give, or refuse to accept, tangible or material support\*

TABLE 3 (Cont.)

12. ACCUSE

121. Charge; criticize; blame; disapprove

13. PROTEST

131. Make complaint (not formal)

132. Make formal complaint or protest

14. DENY

141. Deny an accusation, attributed policy, action, role, or position

15. DEMAND

150. Issue order or command; insist; demand compliance; etc.

16. WARN

160. Give warning

17. THREATEN

171. Threaten without specific negative sanctions

172. Threaten with specific non-military negative sanctions

173. Threaten with force specified

174. Threaten with negative sanctions and time limit specified; ultimatum

18. DEMONSTRATE

181. Non-military demonstration; walk out on; boycott

182. Armed force mobilization, exercise, and/or display; blockade

183. Attempt to cause physical destruction\*

19. REDUCE

191. Cancel or postpone planned event; withdraw offer

192. Reduce routine international activity; recall officials; etc.

193. Reduce or suspend aid or assistance; permanently withhold

194. Halt negotiations

195. Break diplomatic relations; declare independence from

196. Increase number or severity of legal barriers on\*

197. Decrease the number of consulates in\*

199. Expressly terminate (or violate) an agreement with\*

TABLE 3 (Cont.)

20. EXPEL

- 201. Order personnel out of country; deport
- 202. Expel organization or group

21. SEIZE

- 211. Seize position or possessions
- 212. Detain or arrest person(s)
- 213. Intrude upon the property or territory of\*

22. FORCE

- 221. Non-military destructive act
- 222. Military injury-destruction; bomb
- 223. Military engagement

23. ORGANIZATIONAL AFFAIRS\*

- 231. Establish a new organization
- 232. Abolish an old organization
- 233. Reorganize or alter the composition of an existing organization
- 234. Join
- 235. Withdraw from membership in
- 236. Revoke or suspend the membership of; expel

NON-INTERACTIVE EVENTS\*

40. PERSONAL HEALTH

- 401. Personal accident (of important person) which affects ability to govern or act
- 402. Become ill in such a way as to affect ability to govern or act
- 403. Recover
- 404. Injure in an assassination attempt
- 405. Important political person's death from natural causes

41. PREPAREDNESS

- 411. Increase the recognized "readiness" of an organization; to go on alert
- 412. Decrease the recognized "readiness" of an organization; to discontinue an alert

TABLE 3 (Cont.)

42. CURRENCY

- 421. Officially increase the value of one's own currency in terms of other currencies
- 422. Officially decrease the value of one's own currency in terms of other currencies
- 423. Other

DOMESTIC EVENTS

Government Structure, Personnel

60. REGULAR STRUCTURAL CHANGE

- 601. Regular power transfer
- 602. Regular executive transfer
- 603. Renewal of executive tenure

61. PERSONNEL CHANGE

- 611. Appointment of politically significant person
- 612. Resignation of politically significant person
- 613. Dismissal of politically significant person

62. IRREGULAR STRUCTURAL CHANGE

- 621. Irregular power transfer or purge
- 622. Dissolution of legislature
- 623. Fall of cabinet; removal from office
- 624. Coup d'etat
- 625. Revolution

Political Participation

63. PHYSICAL PROTEST, NO VIOLENCE

- 631. Political or general strike
- 632. Economic or other strike
- 633. Boycott
- 634. Anti-demonstration
- 635. Attempted coup

TABLE 3 (Cont.)

- 636. Seizure of government property
- 637. Seizure of government personnel
- 638. Symbolic protest; demonstration
- 639. Defection
- 64. PHYSICAL PROTEST, VIOLENCE
- 641. Assassination
- 642. Attempted assassination
- 643. Symbolic demonstration or suicide
- 644. Riot
- 645. Mutiny
- 646. Sabotage
- 647. Terrorism or armed attacks
- 648. Guerrilla warfare
- 649. Civil war
- 65. PHYSICAL EXPRESSIONS OF SUPPORT
- 651. Pro-demonstration
- 652. Symbolic demonstration of support
- 66. ELECTIONS
- 661. Hold elections
- 662. Schedule elections
- 663. Cancel or postpone elections
- 67. EXPRESS VERBAL SUPPORT
- 671. Approve; endorse; praise; thanks
- 672. Promise
- 673. Agree to future action; agree to meet
- 674. Formal agreement
- 675. Give friendly warning

TABLE 3 (Cont.)

68. GRANT SUPPORT

- 681. Grant
- 682. Reward
- 683. Yield; apologize

69. GENERALLY SUPPORTIVE ACTIVITY

- 691. Request
- 692. Propose; urge
- 693. Explain policy
- 694. Meet with
- 695. Refuse comment
- 696. Make general comment; express hope, concern, fear

70. EXPRESS VERBAL HOSTILITY

- 701. Reject; refuse; oppose
- 702. Accuse; charge; denounce
- 703. Protest; complain
- 704. Deny
- 705. Demand; insist
- 706. Warn
- 707. Threaten

71. REDUCE RELATIONSHIP

- 711. Cancel; postpone planned event
- 712. Reduce routine relationship, activity
- 713. Reduce or suspend aid or assistance
- 714. Halt negotiations, talks
- 715. Terminate or violate an agreement

Relationship Between Ruler and Ruled

72. GOVERNMENTAL SANCTIONS, NON-VIOLENT

- 721. Sanctions against organization or group (non-governmental)
- 722. Ban demonstration

TABLE 3 (Cont.)

- 723. Outlaw political group
- 724. Order to halt strike, boycott, protest
- 725. Declare martial law or state of emergency
- 726. Political arrest
- 727. Curtail press freedom
- 728. Exile
- 73. GOVERNMENTAL SANCTIONS, VIOLENT
- 731. Execute
- 732. Attack crowd; produce injuries or death
- 733. Produce injury or death to individual not in crowd
- 74. GOVERNMENTAL RELAXATION OF RESTRICTIONS
- 741. Lift martial law; state of emergency
- 742. Relaxation of sanctions or other restrictions
- 743. Release persons or property
- 75. OTHFR
- 751. Change in laws or constitution

The event length classification code shown in Table 4 is used to determine the length of time over which an event occurs. Most events occur and are completed in one day--therefore they are discrete (coded 1). Some events, such as negotiations, continue over time (coded 3). Others such as an increase (coded 5) or decrease (coded 6) of military activity are distinct changes in activity levels already underway.

TABLE 4  
EVENT LENGTH CODE

<u>CODE</u>	<u>MEANING</u>
1	Brief, discrete activity lasting less than one calendar day
2	Distinct beginning of an activity that lasts more than a calendar day
3	Continuation of an activity already underway

TABLE 4 (Cont.)

4	Distinct ending of an activity already underway
5	Distinct increase in an ongoing activity
6	Distinct decrease in an ongoing activity
0	Unknown; not specified

First (Direct) International Target

The first international target is the country, group, region, or international organization to whom the event is directed. If there is no direct target, the target code is "999" (non-directional). If there are more than three direct targets, the target code is "998" (multilateral group). If the event is domestic, it is coded "0" in the furthest right-hand column of the category (column 21).

First (Direct) Subnational Target

The first subnational target is the person or group to whom the event is directed.

Second (Indirect) International Target

The second international target is any second country, group, region, or international organization about which the event occurs. For example, if Afghanistan is complaining to the Soviet Union about Albania's rearmament policy, Albania would be the second international target. There is not always a second international target. When there is none, "0" is placed in the furthest right-hand column (column 28) of the second international target field.

## Second (Indirect) Subnational Target

The second subnational target is any second person or group about whom the event occurs. Again, there is not always a second subnational target. When there is none, "0" is placed in the furthest right-hand column (column 32) of the second subnational target field.

## SUBJECT CODES

Subject codes are general descriptive categories that may be applied to each event. The list of subject codes includes five major areas: economic, social, political, science and technology, and military. Under each of these major areas there is a list of categories that might be applied to international or domestic events. A maximum of three applicable subject codes may be applied to each event. If there are more than three applicable subject codes, only the two major subject codes are coded, followed by "999." ALWAYS CODE TO THE FURTHEST RIGHT-HAND COLUMNS (COLUMNS 39-41) UNDER "SUBJECT CODE." Table 5 lists the subject codes.

TABLE 5  
GENERIC SUBJECT RETRIEVAL CODES

<u>CODE</u>	<u>SUBJECT</u>
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<u>ECONOMIC</u>	
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<u>International</u>	
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100	Trade
110	Trade agreements
111	Amounts and directions; trends; composition
112	Quotas
113	Tariffs

TABLE 5 (Cont.)

119	Other
120	Finance
121	Balance of payments
122	Exchange rates; policies; mechanisms; and institutions for adjustment
129	Investment
130	Business
131	Government (aid)
132	Economic aid
134	Technical aid (teams, technicians)
139	Other
140	Energy
141	Business
142	Government
143	Other
145	International labor relations
146	Transportation and communication
148	Development of resources
149	Other
	<u>Internal</u>
150	Growth and development
151	GNP; national income; levels and composition
152	Investment
153	Production
154	Industrialization; growth of technology
155	Energy
156	Development of resources
160	Manpower
161	Graft and trade unions
169	Other
170	Problems
171	Inflation; price levels; wage rates

TABLE 5 (Cont.)

172	Unemployment and underemployment
173	Regional problems
179	Other
180	Government policies
181	Fiscal
182	Monetary
190	Other (none of the above)

SOCIAL200 International

211	Migration
212	Personal travel
213	Cultural relations
214	Ecology; pollution
215	Narcotics; crime
240	Other

250 Internal

251	Religion
252	Narcotics; crime
253	Education
254	Health
255	Personal travel
256	Social unrest
257	Ecology; pollution
258	Other

POLITICAL300 International

311	Laws; treaties; negotiations
312	General relations of states
313	Diplomatic/consular affairs
314	International organizations, memberships and activities

TABLE 5 (Cont.)

315	Formal alliances, political/military/economic
316	General reduction of violence (war, terrorism); cease-fire
318	Border disputes
319	Territorial waters
320	Airspace
321	Military conflict
322	Territory
340	Other

350 Internal

351	Civil rights; voting; democratic processes
352	Political parties; movements
353	Judicial processes, administration of justice
355	Internal security (police action, activity)
356	Insurgent & guerrilla activity
357	Government structure
358	Government personnel
359	Government policy

SCIENCE AND TECHNOLOGY

400 International

411	Medical transfer
412	Agriculture; fisheries
413	Natural resources
414	International communications
415	Military technology
416	Industrial technology
417	Nuclear development
418	Space research
419	General technological transfer
440	Other

449 Internal

TABLE 5 (Cont.)

450	Military related
451	Missile research
452	Nuclear weapons research
453	Chemical and biological weapons research
454	New and unconventional weapons research
479	Other
480	Non-military related
481	Space research
482	Nuclear reactors
483	Medical research
484	Agriculture; fisheries
485	Natural resources
486	Communications
490	(Pure) Scientific research

MILITARY500 Strategic Nuclear Forces

501	Force levels
502	Procurement of weapons; expenditures
505	Deployment; transit; base rights; logistics
510	Training and readiness
549	Other

550 General Purpose Forces

551	Force levels
552	Procurement of new weapons; expenditures
553	Mobilizations; deployments
555	Transit; locations; etc.
560	Training and readiness
570	International military aid (including training, equipment, troops)
571	Military sales transfers
599	Other

TABLE 5 (Cont.)

OTHER

900 Other; general

MORE THAN THREE OF THE ABOVE

999 More than three of the above subjects involved

ISSUE CODES<sup>6</sup>

An issue is defined as a point of contention or debate about some stated condition (often an act, policy, state of relations, or territorial statute). There are objections to this definition. In particular, it does not encompass areas of debate in which the alternatives are unclear but applies only to some condition where objections may be made.

Currently, 59 international issues involving Japan are to be coded. The issues are shown below in Table 7 with 4-digit issue codes. The first digit of each code (1,2,3,4, or 9) relates to one of the "issue-areas" shown in Table 6. The issue-area typology was suggested by Rosenau (1968) who argues that "the functioning of any type of political system can vary significantly from one issue-area to another." The issue-area codes provide a basis for aggregating issue data to an intermediate level between the issue level and the fully aggregated level. The intermediate level is potentially helpful in analyzing and estimating international behavior because, as Rosenau argues, processes of behavior may vary across issue-areas.

An issue belongs to a particular issue-area when the issue pertains to the allocation of the particular value. For example, the Okinawa issue is in the territorial area because the issue pertains to the allocation of territory; the Japan textile exports issue is in the nonhuman resources area

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<sup>6</sup> For a more detailed discussion of issue, see Moore, et al. (1973).

because the issue concerns the allocation of material goods; any diplomatic recognition issue is in the status area. The last three digits in the issue code simply identify an issue number.

TABLE 6  
ISSUE-AREAS

1. Territorial Area
2. Human Resources Area
3. Nonhuman Resources Area
4. Status Area
9. None of above or unclear

An issue code is assigned to an event when the event is unambiguously "about" the issue, that is, when the event contains an explicit reference to the issue, to any meeting or conference in which the issue is discussed, or to someone's position on the issue, or when the event constitutes the realization or negation of the condition at issue. The following list contains a number of events that may be about an issue:

1. An expression of preference or position regarding the issue, for example, preference for or against an act, policy, or state of relations, or preference for territorial status.
2. A meeting about the issue.
3. A comment about issue-related meetings or negotiations.
4. A refusal to take a position.
5. A discussion of implications, in any area, of different resolutions of the issue or of settlement in general.
6. An assessment of the likelihood of one or more particular resolutions, or any resolution at all.
7. A comment about another's position.
8. An event related to the issue; for example, a trade agreement where the issue is whether or not to increase trade.

TABLE 7\*  
ISSUES REGARDING JAPAN

- 9001 An international conference should be held to discuss the Vietnam War.
- 3001 Japan should not provide support for U.S. troops during the Vietnam War.
- 1001 Japan should not continue to permit U.S. bases on her soil.
- 4001 Japan should establish diplomatic relations with North Vietnam.
- 4002 Japan should establish diplomatic relations with North Korea.
- 4003 Japan should recognize China and establish diplomatic relations.
- 4004 China should be represented in the United Nations.
- 4005 Taiwan should be excluded from the United Nations.
- 3002 Japan should increase trade with China.
- 4006 Japan should cease diplomatic relations with Taiwan.
- 9002 Cambodia should be a neutral nation.
- 3003 Japan should not invest in Indonesian oil resources.
- 9003 Japan and the Soviet Union should expand the number of air routes between the two countries.
- 1002 The Soviet Union should return the Northern Territories to Japan.
- 3004 There should be increased trade between Japan and the Soviet Union.
- 3005 The Soviet Union should permit Japanese fishermen in the waters of the Northern Islands.
- 3006 Japan should be involved in the development of Soviet oil, coal, and gas.
- 3007 Japan should be involved in the development of Russia's timberlands.
- 1003 Okinawa should revert to Japan.
- 1004 The United States should not have nuclear devices on its bases in Okinawa.

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\* Issues are expressed in terms of non-status quo propositions. New issues will be added to the current list as they arise.

TABLE 7 (Cont.)

- 1005 The United States should not have poisonous gases on its bases on Okinawa.
- 3009 Japan should finance part of the U.S. military that defends Japan.
- 1006 U.S. bases in Japan should not be allowed to receive ships that carry nuclear weapons.
- 2001 Japan and the United States should not retain a security treaty for mutual defense.
- 3010 There should be a Japanese textile export quota.
- 3011 Japan should reduce its import quotas.
- 3012 Japan should revalue its currency.
- 3013 Japan should reduce its capital investment overseas.
- 3014 The United States should place no limits on the export of technology to Japan.
- 1007 The United States should withdraw completely from the Ryukyus.
- 3015 Japan should increase its investment in North Vietnam.
- 3016 Japan's investment in the United States should be reduced.
- 3017 Japan's investment in Australia should be reduced.
- 9005 Japan should rebuild its military power beyond the "self-defense" state.
- 3008 Japan should not invest (financially and technologically) in the Middle East.
- 9004 Japan should adhere to international trade agreements (e.g., Kennedy round).
- 4007 The Soviet Union should conclude a peace treaty with Japan.
- 2002 The United States should withdraw from Vietnam/Indochina.
- 1008 Japan should support Korean reunification.
- 3018 Japan should support the Arabs in the Middle East.
- 3019 Japan and North Korea should increase trade.

TABLE 7 (Cont.)

- 3020 The United States should grant Japan more trade concessions.
- 9006 Japan should develop a nuclear capability.
- 3021 Japan should increase investment in Southeast Asia.
- 3022 Japan should import more from Southeast Asia to adjust balance of payments.
- 3023 Japan should import more from Asia to adjust balance of payments.
- 3024 Japan should increase trade and/or economic investment with the EEC.
- 3025 Japan should extend economic/technical aid to Arab nations.
- 3026 Japan should extend economic/technical aid to China.
- 2003 Japan should take an active role in seeking a Middle East settlement.
- 4008 Japan should recognize Prince Sihanouk's government-in-exile as the rightful government of Cambodia, and break relations with the Lon Nol regime.
- 4009 Japan should break diplomatic relations with Israel.
- 2004 Japan should ratify the nuclear non-proliferation treaty.
- 3027 Japan should lower its fishing quotas in the Northwest Pacific.
- 1009 Senkaku Island should be returned to Japan.
- 2005 The Soviet Union and Japan should form a collective security system in Asia.
- 2006 China, the United States, and Japan should form a collective security system in Asia.
- 2007 China and Japan should form a collective security system in Asia.
- 3028 Japan should participate in the development of the North Sea oil resources.

THE ISSUE POSITION CODE

The current definition of "issue" is built around the idea of a condition which, in the view of an actor, should or should not exist. Some acts express a preference for or against the condition at issue. The issue

position code records such a position as either supporting (code = 1) or opposing (code = 2) the non-status quo proposition. As a convention, positions on the non-status quo condition will be recorded. For example, on the Okinawa issue, the position is recorded in terms of opposition to or support for a quota.

Each issue in Table 7 is stated in terms of a non-status quo proposition in order to facilitate issue-position coding. THE CODER GIVES AN ISSUE POSITION CODE OF "1" IF THE EVENT SUPPORTS THE PROPOSITION; A CODE OF "2" IF THE EVENT OPPOSES THE PROPOSITION; AND A CODE OF "0" IF THERE IS NO EVIDENCE OF OPPOSITION OR SUPPORT. IF THERE IS NO ISSUE, "00" IS CODED IN COLUMNS 49-50. If a position is coded 1 or 2, the event must explicitly express a position; that is, contain a statement of or express a belief, request, or demand that the condition should or should not exist.

#### SOURCE CODE

This is a 1-digit code for the data source. The code for FBIS is 2.

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#### IV. TEXTUAL ABSTRACT

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For each coded event there is a complete one sentence description of the event that gives the unique aspects of the event that analytic coding obscures.<sup>7</sup> It is not a verbatim translation of the analytic code; rather, it specifically provides more information about the event reported in the coding source. A single descriptive sentence, however, may follow several coded events; but more than one descriptive sentence should never follow analytically coded (numeric) events.

A number of conventions have been developed by the World Event/Interaction Survey (WEIS) for constructing the description. First, all nations named in the article should be mentioned in the event description. Whenever a nation is mentioned, its 3-letter alphabetic code is used. This enables the computer programs to scan the text for events not obtainable by analytic retrievals. For this reason, it is necessary to keep the descriptive codes for a conference, agreement, or negotiations the same. For example, the word-set "European Security Conference" must be used for any event that involves this conference in any way because there is no analytic code that signifies the European Security Conference. If it is typed the same way every time it is mentioned in an event, the TEXSCAN program can pick out the events in which it is important.

The first words of a description should identify the actor (3-letter alpha codes only), the subactor, and the last name of the subactor if stated in the article.

Example:	United States	President Nixon
becomes:	USA	PRS Nixon

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<sup>7</sup> This section is abstracted from Truesdell (1973).

Example: United Nations    General Assembly  
becomes:                    UNO                                    GA

The event should not be stated as its DECS code name but according to the wording of the article. Example: 002 121 365 should not mean: USA SST Rogers criticizes USSR. It should be stated: USA SST Rogers says USSR system of government cares not at all for its citizens.

Targets use the same convention as actors. The 3-letter alpha code of the target nation is used; if the event is directed at a specific subtarget, the target's office and name are mentioned.

USA VP Agnew arrives for 2-day visit in USSR and is greeted  
by USSR PRS Podgorny and FM Gromyko

The description can include any form of punctuation. Periods at the end of the sentence are not necessary and have not been used previously. If a proposal or agreement is the event, the specific points should be mentioned. Likewise, the specific points reflected by one nation in another nation's proposal should be included. The names and locations of battles, seized positions, surrenders, meetings, and demonstrations are also included. For example, the towns and their distances from major cities are usually given in IDO battle reports. Therefore this information should be included. Also, in the Vietnam bombings and engagements, one double-coded engagement is coded for the nation in which numerous engagements actually took place. In the description, the actual number and location of battles are mentioned. Thus, the description would read: VTS and VTN forces fight 250 battles centered at My Lai, Danang, Quangtri City, and Pleiku, VTS.

The important consideration in constructing descriptions is to make each a single complete sentence, no longer than three lines, and totally comprehensible to a reader 5 years hence. Thus, each description must contain enough information for the event to be understood.

Abbreviations are used wherever possible (e.g., RELNS for Relations). Also, numerals are used instead of words (e.g., 8 for eight). The sentence must not exceed 3 lines of 51 columns due to computer storage limitations.

TABLE 9  
DESCRIPTIVE ACRONYMS

PRS	President
PRM	Premier
PM	Prime Minister
FM	Foreign Minister
SST	Secretary of State
DOS	Department of State
SOD	Secretary of Defense
DOD	Department of Defense
VP	Vice President
JMC	Joint Military Commission in South Vietnam (VTS, VTN, USA, VCG)
ICS	International Commission for Supervision of the Cease-Fire in Vietnam
ICC	International Control Commission
OPEC	Organization of Petroleum Exporting Countries
ICJ	International Court of Justice
CHRMN	Chairman
SG	Secretary General
AMB	Ambassador
ADV	Advisor
PRS ADV	Presidential Advisor
CP SEC	Communist Party officials
GEN	General
ASST	Assistant
DEP	Deputy
GOVT	Government
REP	Representative
ADM	Administration
SPKM	Spokesman

TABLE 9 (Cont.)

GA	General Assembly
SC	Security Council
CMW	Commonwealth
LDP	Japan Liberal Democratic Party
JCP	Japan Communist Party
DEM-SOC	Japan Democratic Socialist Party
JSP	Japan Socialist Party
HSE of C	Japan House of Councillors
MBFR	Mutual Balanced Force Reduction
ESC	European Security Conference

# BIBLIOGRAPHY

- AZAR, E.A. (1970) "Conflict and Peace Data Bank: A Codebook." University of North Carolina Studies of Conflict and Peace.
- AZAR, E.A., T. JUKAM, and J. McCORMICK (1969) "A Quantitative Comparison of Source Coverage for Events Data: Preliminary Findings." Michigan State University, Cooperation/Conflict Research Group.
- BANKS, A.S. (1972) "The SUNY-Binghamton Cross-National Time-Series Data Archive: Variable Definitions and Sources." Technical Report No. 2, State University of New York, Binghamton.
- BURROWES, R. and B. SPECTOR (1972) "The Strength and Direction of Relationships Between Domestic and External Conflict and Cooperation: Syria, 1961-67." In Jonathan Wilkenfeld (ed.), Conflict Behavior and Linkage Politics. New York: David McKay Company, Inc.
- COPLIN, W., S.L. MILLS, and M.K. O'LEARY (1973) "The PRINCE Concepts and the Study of Foreign Policy." In Patrick J. McGowan (ed.), The International Yearbook of Foreign Policy Studies. Beverly Hills: Sage Publications.
- FEIERABEND, I. and R. FEIERABEND (1968) Political Events Project Codebook. International Data Archive, University of Michigan.
- FITZSIMMONS, B., G. HOGGARD, C. McCLELLAND, W. MARTIN, and R. YOUNG (1969) "World Event/Interaction Survey Handbook and Codebook." World Event/Interaction Survey, Technical Report 1, University of Southern California, January.
- HERMANN, C. (1970) "What is a Foreign Policy Event?" Princeton University.
- HOLT, J.T. (1973) "The Defense Events Coding System." Arlington, VA: CACI, Inc. (Mimeographed)
- LENG, R.J. (1972) "Problems in Events Data Availability and Analysis." Paper prepared for presentation at the Annual Meeting of the New England Political Science Association, Kingston, Rhode Island.
- McCLELLAND, C.A. (1966) Theory and The International System. New York: Macmillan Co.
- McGOWAN, P.A. (1970) "The Unit-of-Analysis Problem in the Comparative Study of Foreign Policy." Syracuse University.
- MOORE, J., M. MAXFIELD and B. HUGHES (1973) "Quantitative Indicators for Defense Analysis: Issue-Level Indicators." Arlington, Va.: CACI, Inc.

- ROSENAU, J.N. (1966) "Pre-theories and Theories of Foreign Policy." In R.B. Farrell (ed.) Approaches to Comparative and International Politics. Evanston: Northwestern University Press.
- ROSENAU, J.N. (1964) "Internal War as an International Event." In James N. Rosenau (ed.) International Aspects of Civil Strife. Princeton, NJ: Princeton University Press.
- ROSENAU, J.N. (1968) "The Concept of Intervention." Journal of International Affairs, Vol. XXII, 2, pp. 165-176.
- RUMMEL, R.J. (1963) "Dimensions of Conflict Behavior Within and Between Nations." General Systems Yearbook 8: 1-50.
- SMITH, R.F. (1969) "On the Structure of Foreign News: A Comparison of the New York Times and the Indian White Papers." Journal of Peace Research 6: 23-36.
- SULLIVAN, J.D. (1969) "International Consequences of Domestic Violence: Cross-National Assessment." Paper presented at the Annual Meeting of the American Political Science Association, New York.
- TANTER, R. (1966) "Dimensions of Conflict Behavior Within and Between Nations, 1958-60." Journal of Conflict Resolution 10 (March): 41-64.
- TAYLOR, C.L., and M.C. HUDSON (1970) World Handbook of Political and Social Indicators II. New Haven: Yale University Press.
- TILLY, C. (1973) "Collective Violence in European Perspective" in I.K. Feierabend, et al., (eds.) Anger, Violence, and Politics. Englewood Cliffs: Prentice Hall.
- TRUESDELL, T. (1973) World Event/Interaction Survey WEIS History and Code-book. Arlington, Va.: CACI, Inc.
- WILKENFELD, J. (ed.) (1972) Conflict Behavior and Linkage Politics. New York: David McKay Company, Inc.

APPENDIX I

EVENT CODES

## INTERNATIONAL EVENTS

### 1. Yield

011. To SURRENDER; YIELD TO ORDER; SUBMIT TO ARREST requires an explicit statement of surrender, yielding, or submission.

Ex: Pakistani troops surrender to Indian forces in Bangladesh.

012. To YIELD POSITION; RETREAT; EVACUATE; SURRENDER POSSESSIONS usually refers to military actions and positions.

Ex: Cambodian forces evacuate positions along Highway 4.

013. To ADMIT WRONGDOING; RETRACT STATEMENT is a non-apologetic act.

Ex: United States retracts an earlier statement accusing India of being pro-Russian.

014. To APOLOGIZE to is an explicit apology for some action or policy.

015. To YIELD TO PRESSURE FROM OR DEMANDS OF is an explicit backing down from an action, situation, or policy under pressure from another international actor.

Ex: Japan backed away from its political support of Israel today under pressure from Arab oil-supplying countries by calling for Israeli withdrawal to pre-1967 boundaries.

### 2. Comment

021. An EXPLICIT DECLINE TO COMMENT requires a specific statement of a decline or refusal to comment.

Ex: President Nixon refuses to comment on the contents of a letter sent to Egyptian President Sadat.

023. A COMMENT ON SITUATION; EXPRESS HOPE, CONCERN, FEAR is a general comment on some international situation. Comments should not be routine statements (e.g., a meeting "seems to be going well"); they should give useful, explicit information. Often comments will have '999' as a first international target and the actor to whom the comment refers as the second international target, except when the act is directly targeted to an international actor.

Ex: Secretary of the Treasury Schultz hopes other nations realize their responsibility for current monetary difficulties.

025. To EXPLAIN POLICY OR FUTURE POSITION is to state important, detailed policy goals and viewpoints, and to explain particular actions or positions. The coding of international targets is much the same as in category "023."

3. Consult

031. To MEET WITH AT NEUTRAL SITE; SEND NOTE is usually double-coded because two actors are meeting with each other. This category includes meetings of international organizations or groups, negotiations and summits. When the actor/target codes are the same (e.g., for an international organization) they are not double-coded. Formal negotiations (e.g., the European Security Conference) are not coded each time they occur--only when they begin or resume after an absence.

Ex: Israeli and Egyptian negotiators meet for the first time in the Sinai.

032. To VISIT, GO TO; RECEIVE VISIT, HOST are always coded together. When and one actor visits another, the actor visiting is coded 032, and the 033 actor visited is coded 033. Often, only the visit is mentioned while the act of receiving the visitor is not. For these codes, only one descriptive sentence (noting the visit) is necessary.

Ex: Secretary of State Kissinger visits China.

4. Approve

041. To PRAISE, HAIL, APPLAUD; EXPRESS CONDOLENCES, CEREMONIAL GREETINGS, THANKS are social or ceremonial expressions of approval that do not imply policy support or endorsement.

Ex: Soviet leader Brezhnev hails the friendship of Cuban Premier Castro.

042. To ENDORSE OTHER'S POLICY OR POSITION; GIVE VERBAL SUPPORT is a formal endorsement, statement of support, or indication of agreement with an act or policy.

Ex: The United States endorses West Germany's policy of detente with Eastern Europe.

043. To PHYSICALLY DEMONSTRATE IN SUPPORT OF involves a physical demonstration in support of another country's action or policy.

Ex: Several hundred Americans demonstrated in support of Israel.

5. Promise

051. To PROMISE OWN POLICY SUPPORT involves a promise to use influence, to support in a political manner, or to give general expressions of support.

Ex: The Soviet Union promises Cuba support in its efforts to release Latin America from U.S. dominance.

052. To PROMISE MATERIAL SUPPORT is a pledge of aid, including all categories of military, economic, technical, and emergency aid.

Ex: The United States pledges to aid victims of the Peruvian earthquake.

053. To PROMISE OTHER FUTURE SUPPORT ACTION is a general category encompassing pledges of support not coded in the 051, 052, 054, or 055 categories.

Ex: The International Control Commission promises to send a group of observers to aid in the elections in South Vietnam.

054. To ASSURE, REASSURE

Ex: Soviet President Podgorny assures North Vietnam of Russia's support in its struggle with the United States and South Vietnam.

055. To PROMISE INFORMATION TO is a specific pledge to furnish information.

Ex: Egyptian President Sadat promises to hand over a list of Israeli POW's to the International Red Cross within the next few days.

6. Grant

061. To EXPRESS REGRET is an informal apology or statement of regret at an action or policy taken.
- Ex: The United States regrets civilian injuries in the bombing near Phnom Penh.
062. To GIVE STATE INVITATION involves issuing a formal state invitation to visit.
- Ex: Japan invites President Nixon to visit Tokyo in the spring.
063. To GRANT ASYLUM
- Ex: France grants asylum to three East Germans who defected.
064. To GRANT PRIVILEGE, DIPLOMATIC RECOGNITION, DE FACTO RELATIONS; SEND AMBASSADOR TO UNOCCUPIED POST. The granting of diplomatic recognition is always double-coded.
- Ex: Sweden grants diplomatic recognition to North Vietnam.
065. To SUSPEND NEGATIVE SANCTIONS; TRUCE; CEASE-FIRE includes the announcement of a truce or cease-fire, not the actual occurrence.
- Ex: The United States rescinds trade embargo of 64 types of machinery against China.
066. To RELEASE AND/OR RETURN PERSONS OR PROPERTY
- Ex: UAR releases six Israeli POW's.
067. To INCREASE NUMBER OF CONSULATES IN
068. To ESTABLISH A LEGATION IN
- Ex: The United States establishes a legation in China.
069. To OPEN AN EMBASSY IN; INCREASE EMBASSY PERSONNEL

7. Reward

071. To EXTEND ECONOMIC AID is an announcement or receipt of economic aid (whether gift or loan).
- Ex: The World Bank will give Brazil a loan of \$49 million.

072. To EXTEND MILITARY ASSISTANCE; JOINT MILITARY EXERCISE

Ex: The United States is sending additional arms to Israel.

073. To GIVE OTHER ASSISTANCE includes all types of assistance other than economic or military (e.g., health, emergency aid, etc.)

Ex: United States sends emergency food supplies to West Africa to aid survivors of drought.

074. To GIVE NON-THREATENING (FRIENDLY) NOTICE OF IMPENDING OR POSSIBLE HARM TO is to give a friendly warning to an actor about a potentially harmful event that might occur toward that actor.

Ex: The United States warned Israel that Egypt was preparing an all-out offensive against Israel in the Sinai.

#### 8. Agree

081. To MAKE SUBSTANTIVE AGREEMENT involves a detailed formal agreement. This category includes joint communiques. It is always double-coded.

Ex: China and the Netherlands sign a trade pact for 1972.

082. To AGREE TO FUTURE ACTION OR PROCEDURE; AGREE TO MEET, TO NEGOTIATE; ACCEPT STATE INVITATION

Ex: The Soviet Union and West Germany agree to talks on expansion of trade.

083. FOR AN AGREEMENT TO GO INTO EFFECT is always double-coded.

Ex: The Vietnam cease-fire began at midnight.

084. FOR AN AGREEMENT TO EXPIRE is always double-coded.

Ex: The Vietnam New Year truce expired today.

#### 9. Request

091. To ASK FOR INFORMATION is to request clarification or substantive information.

Ex: Israel asks Syria to turn over a complete list of Israeli POW's.

092. To ASK FOR POLICY ASSISTANCE; SEEK HELP includes requests for political support or the use of political influence.
- Ex: Cambodia asks the United States to use its influence with its Asian allies to obtain military support for Cambodia.
093. To ASK FOR MATERIAL ASSISTANCE includes requests for all types of material aid.
- Ex: Israel asks for military aid from the United States.
094. To REQUEST ACTION; CALL FOR; ASK FOR ASYLUM
- Ex: Rumanian President Ceausescu requests the Warsaw Pact to formally recognize the sovereignty of all member-nations.
095. To ENTREAT; PLEAD FOR; APPEAL TO is generally an emotional request or appeal.
- Ex: Pope Paul appeals for peace in his annual 1973 Christmas message.
096. To REQUEST GRANTING OF RIGHTS AND/OR PRIVILEGES
- Ex: The United States asked Spain to grant base-rights extension.
10. Propose
101. To OFFER PROPOSAL is to offer a specific and formal proposal.
- Ex: The United States today offered a new proposal to the Soviet Union on the limitation of strategic weapons.
102. To URGE OR SUGGEST POLICY OR ACTION is to suggest a future action or policy rather than offer a specific, detailed formal proposal.
- Ex: Japan urges Israel to return all occupied territories.
11. Reject
111. To TURN DOWN PROPOSAL; REJECT PROTEST, DEMAND, THREAT is a rejection of a specific claim or statement.
- Ex: Israel rejects U.S. proposal of withdrawal from Golan Heights.
112. To REFUSE; OPPOSE; REFUSE TO ALLOW; EXCLUDE; FAIL TO REACH AGREEMENT
- Ex: Israeli Prime Minister Meir refuses to acknowledge any Jordanian Government rights in Jerusalem.

113. To REFUSE TO GIVE INFORMATION TO

Ex: Syria refuses to give the International Red Cross a list of Israeli POW's.

114. To REFUSE TO GIVE CERTAIN RIGHTS AND PRIVILEGES TO

Ex: Spain refuses to grant an extension of U.S. base rights.

115. To REFUSE TO GIVE OR REFUSE TO ACCEPT TANGIBLE OR MATERIAL SUPPORT

Ex: Saudi Arabia refuses to give any more oil to the United States.

12. Accuse

121. To CHARGE; CRITICIZE; BLAME; DISAPPROVE

Ex: China accuses the United States of imperialist aggression in Indochina.

13. Protest

131. To MAKE COMPLAINT is an informal protest about an action or policy.

Ex: Soviet Ambassador Dobrynin complains about demonstrators outside Soviet embassy in Washington.

132. To MAKE FORMAL COMPLAINT OR PROTEST is a formally lodged protest.

Ex: Israel lodges a formal protest at the U.N. about Syrian treatment of Israeli POW's.

14. Deny

141. To DENY AN ACCUSATION, POLICY, ACTION, ROLE, OR POSITION

Ex: North Korea denies U.S. charge that it attacked a South Korean ship.

15. Demand

150. To ISSUE ORDER OR COMMAND; INSIST; DEMAND COMPLIANCE

Ex: The UAR demands that Israel return all occupied territories and restore rights of Palestinians.

16. Warn

160. To GIVE WARNING

Ex: Egyptian President Sadat warns Israel that a new war will occur in the Middle East unless Israel withdraws from occupied territory.

17. Threaten

171. To THREATEN WITHOUT SPECIFIC NEGATIVE SANCTIONS is a threat with no mention of what particular action will be taken.

Ex: Israel warns Jordan that Israel will take action if guerrilla activity increases.

172. To THREATEN WITH SPECIFIC NON-MILITARY NEGATIVE SANCTIONS is a threat with mention of a specific, non-military response.

Ex: Jordan's King Hussein threatens to withdraw his support from Arab-Israeli negotiations if Jerusalem is not restored to Palestine.

173. To THREATEN WITH FORCE SPECIFIED is a threat with mention of a specific, military response.

Ex: President Nixon warned that he would increase the bombing of North Vietnam if the North Vietnamese did not engage in serious peace negotiations.

174. To THREATEN WITH NEGATIVE SANCTIONS AND TIME LIMIT SPECIFIED; ULTIMATUM

Ex: Saudi Arabia threatens to cut off all oil shipments to Europe by December if Israeli policy does not change.

NOTE: A threat is different from a warning in that there is usually an if...then implication. If this implication is absent, the event is coded as a warning.

18. Demonstrate

181. A NON-MILITARY DEMONSTRATION; WALK OUT ON; BOYCOTT includes demonstrations against foreign countries or against another international actor.

Ex: Japanese students demonstrated against a U.S. ship carrying nuclear weapons anchored near Tokyo.

182. An ARMED FORCE MOBILIZATION, EXERCISE, AND/OR DISPLAY; BLOCKADE includes any alerts, mobilizations, or military demonstrations.
- Ex: The United States places troops on partial alert in midst of Mideast crisis.
183. An ATTEMPT TO CAUSE PHYSICAL DESTRUCTION is an unsuccessful attempt to cause destruction to persons or property other than military actions.
- Ex: U.S. demonstrators in front of the Soviet embassy attempted to break into the embassy and speak with Ambassador Dobrynin.
19. Reduce Relationship
191. To CANCEL OR POSTPONE PLANNED EVENT; WITHDRAW OFFER
- Ex: President Nixon postponed his European tour until sometime next year.
192. To REDUCE ROUTINE INTERNATIONAL ACTIVITY; RECALL OFFICIALS includes reduction of trade or other usual activity, recall of diplomatic officials, embargoes, bans, etc.
- Ex: Cuban Premier Castro announces drastic reduction of trade with China.
193. To REDUCE OR SUSPEND AID OR ASSISTANCE; PERMANENTLY WITHHOLD
- Ex: The United States announces reduction of the AID program in Laos.
194. To HALT NEGOTIATIONS is an abnormal interruption of talks or negotiations.
- Ex: Rhodesia and the United Kingdom break off discussions when no agreement is reached.
195. To BREAK DIPLOMATIC RELATIONS; DECLARE INDEPENDENCE FROM
- Ex: Switzerland breaks relations with Rhodesia.
196. To INCREASE NUMBER OR SEVERITY OF LEGAL BARRIERS ON
- Ex: Uganda says special permits will be required for Americans visiting Uganda.

197. To DECREASE NUMBER OF CONSULATES IN
198. To RECALL A MINISTER OR AMBASSADOR FROM is a political recall without intention of immediate replacement.
199. To EXPRESSLY TERMINATE OR VIOLATE AN AGREEMENT WITH
- Ex: Japan said it would not respect the International Whaling Ban.
20. Expel
201. To ORDER PERSONNEL OUT; DEPORT
- Ex: The Soviet Union orders a CBS newsman to leave.
202. To EXPEL ORGANIZATION OR GROUP
- Ex: Uganda expels U.S. embassy marine guards.
21. Seize
211. To SEIZE POSITION OR POSSESSIONS involves military seizures and occupations, kidnappings, and nationalizations.
- Ex: Chile nationalizes ITT holdings.
212. To DETAIN OR ARREST PERSON(S)
- Ex: Israel captures 30 Syrian guerrillas.
213. To INTRUDE UPON THE PROPERTY OR TERRITORY OF is to intrude upon another's property or trespass a border, other than a military incident.
22. Force
221. A NON-MILITARY DESTRUCTIVE ACT
- Ex: Indonesian students invade the Chinese consulate in Djakarta, damaging its contents.
222. MILITARY INJURY-DESTRUCTION; BOMB is a military, unreciprocated act.
- Ex: The United States bombs Cambodian rebel troops.
223. A MILITARY ENGAGEMENT is double-coded because two or more nations must be involved. Thus, it is a reciprocal military act.
- Ex: South Vietnamese and Vietcong battle near Hue.

23. Organizational Affairs

Events 231-236 refer strictly to international or regional organizations, governmental or non-governmental.

DOMESTIC EVENTS

60. Regular Structural Change

601. A REGULAR POWER TRANSFER is a legitimate transfer of power or authority from one person or group within the government to another.

Ex: President Nixon will phase out OEO and transfer its activities to HEW.

602. A REGULAR EXECUTIVE TRANSFER is a change in the office of national executive from one leader or ruling group to another that is accomplished through conventional legal or customary procedures and involves no physical violence.

Ex: Congress votes to confirm Gerald Ford as Vice-President.

603. A RENEWAL OF EXECUTIVE TENURE is an act that reestablishes or reconfirms the term of office of the national executive, incumbent leader, or ruling group through the country's regular institutionalized channels, involving no physical violence.

Ex: President Nixon is reelected for a second term.

61. Personnel Change

611. An APPOINTMENT OF A POLITICALLY SIGNIFICANT PERSON OR GROUP is an appointment to political office of national executive officers, leaders, and prominent members of legislatures, judiciary, political party members and members of other important political groups, and military leaders.

Ex: Japanese Premier Tanaka appoints Fukuda as Finance Minister.

612. A RESIGNATION OF A POLITICALLY SIGNIFICANT PERSON OR GROUP is a resignation, for political reasons (i.e., not for health reasons), of a politically significant person as defined in category 611.

Ex: Attorney General Richardson resigns because of President Nixon's firing of Special Prosecutor Archibald Cox.

613. A DISMISSAL OF A POLITICALLY SIGNIFICANT PERSON OR GROUP is a dismissal, for political reasons, of a politically significant person as defined in category 611.

Ex: Acting U.S. Attorney General Bork fires Special Prosecutor Cox.

62. Irregular Structural Change

621. An IRREGULAR POWER TRANSFER OR PURGE is a change in the office of national executive, executive branch, legislature, judiciary, political group, etc., which encompasses violence or the threat of violence, and is performed outside of legitimate authority or customary channels. This category does not include coups.

Ex: The Greek Military Government arrested Premier Papodopoulis today and replaced him with a member of the military junta.

622. A DISSOLUTION OF THE LEGISLATURE encompasses all situations in which the entire legislature is dismissed, whether by failure of a vote of confidence, by other means sanctioned by the system, or by an illegitimate act.

Ex: Canadian Prime Minister Trudeau dissolves legislature and orders new elections.

623. A FALL OF CABINET; REMOVAL FROM OFFICE occurs when the entire cabinet resigns or is dismissed.

Ex: Swedish cabinet resigns because of inability to reach agreement on expansion of pension system.

624. A COUP D'ETAT is an illegal forced change of top-government office-holders by counter-elites.

Ex: President Allende of Chile was toppled in a coup by military leaders.

625. A REVOLUTION is an armed attempt on the part of a group to form a government. The gravity of the event is less than that of civil war, involving less of the population and a smaller geographical area. It is unlike a coup in that more than opposing elites are involved.

Ex: M.N.R. in Bolivia leads revolt in Bolivian provinces against government.

63. Physical Protest, No Violence

631. A POLITICAL OR GENERAL STRIKE is a work stoppage by a body of industrial or service workers or a stoppage of normal academic life by students to protest against a regime, government leaders, government policy, or government actions.

Ex: Italian workers in Calabria strike against government favoritism toward northern provinces in allocation of resources.

632. An ECONOMIC OR OTHER STRIKE is a work stoppage for economic or work contract-related issues.

Ex: General Motors plant workers in Cleveland struck for higher pay and dental coverage.

633. A BOYCOTT is denial of business or other interchange by one group or organization to another to bring about compliance with demands.

Ex: Quakers and members of the American Friends Service Committee boycott all products produced by ITT because of ITT's production of devices used in Vietnam combat.

634. An ANTI-DEMONSTRATION is a non-violent gathering of people organized for the announced purpose of protesting against a regime, government, its ideology, or one or more of its leaders.

Ex: Some one thousand protesters demonstrated in front of the White House today for the impeachment of President Nixon.

635. An ATTEMPTED COUP is an unsuccessful armed attempt by counter-elites to take over the government.

Ex: Chilean President Allende put down an attempted coup by military leaders.

636. A SEIZURE OF GOVERNMENT PROPERTY occurs when a group or individual takes possession or attempts to seize property belonging to the government (at all levels of government).

Ex: Students at Harvard University occupied the ROTC building for 36 hours.

637. A SEIZURE OF GOVERNMENT PERSONNEL occurs when a group or individual seizes or kidnaps a government official at any level of government.
- Ex: A district court judge was kidnapped from a U.S. courtroom in Marin County, California.
638. A SYMBOLIC PROTEST; DEMONSTRATION is any other form of protest against a regime, government, government policy or action, government leaders, etc., that may be viewed as organized or disorganized protest.
- Ex: Demonstrators at the White House urged passing automobiles to "honk" for impeachment.
639. A DEFECTION occurs when a person from one country defects to another country.
- Ex: Two Soviet sailors jump ship and ask for asylum in Mexico.

64. Physical Protest, Violence

641. An ASSASSINATION is the murder of a high government official or politician on the national or subnational level.
- Ex: Chilean President Allende is killed in the coup by military leaders.
642. An ATTEMPTED ASSASSINATION is the attempted murder (unsuccessful) of a high government official or politician on the national or subnational level.
- Ex: An attempt was made to kill Governor George Wallace at a campaign rally in Maryland.
643. A SYMBOLIC DEMONSTRATION OR SUICIDE is a symbolic protest involving violence. The protest is against the government, leaders, government action or policy, etc.
- Ex: A Buddhist monk set himself on fire outside the American Embassy in Saigon to protest American policy in Vietnam.

644. A RIOT is a violent demonstration or disturbance involving a large number of people. "Violence" implies the use of physical force and usually involves the destruction of property, the wounding or killing of people, etc. Riots are generally spontaneous in nature.
- Ex: Students at the Free University of Berlin rioted today when a Marxist professor was expelled from the University.
645. A MUTINY occurs when persons under order refuse to act according to others.
- Ex: Several sailors on a U.S. ship in San Diego refused to return from shore leave.
646. SABOTAGE is organized, violent, and sporadic activity on the part of small groups of citizens aimed at harassment of the government or other groups. Acts of sabotage are directed against property rather than people.
- Ex: The Weathermen blew up an ITT office in Rome today.
647. TERRORISM OR ARMED ATTACKS consist of organized violent activity on the part of small groups of citizens aimed at harassment or intimidation of the government or groups in society. Terrorist attacks are directed against persons or against persons and property.
- Ex: The Weathermen blew up a building on the Wisconsin campus, killing a man working in the building.
648. GUERRILLA WARFARE is armed activity by mobile and scattered forces aimed at the ultimate overthrow of the government. Guerrilla activity is characterized by the irregular tactics employed.
- Ex: The IRA bombed a British soldiers' quarters in Northern Ireland.
649. CIVIL WAR involves an all-out war between two or more organized major segments of the society. Each segment has its own government and the entire nation is involved, and armed conflict takes place on a large scale.
- Ex: The Vietcong attacked Hue Government positions.

65. Physical Expressions of Support

651. A PRO-DEMONSTRATION is an organized, non-violent gathering of people whose purpose is to lend support to a government, its policies and actions, or to one or more of its leaders. The issues involved are perceived as significant at the national level, but within that framework regime-support demonstrations directed at all branches and levels of government are included.

Ex: Reverend McIntyre organized a demonstration of 20,000 people to support U.S. Vietnam policy.

652. A SYMBOLIC DEMONSTRATION OF SUPPORT is a physical demonstration of support for a government, its policies and actions, or its leader(s), which is symbolic in nature and may involve one or more groups or individuals.

Ex: Supporters of President Nixon sent telegrams of support to the White House.

66. Elections

661. To HOLD ELECTIONS involves people in a country voting for government leaders or issues.

Ex: Congressional elections were held in many states today for the 1974 Legislature.

662. To SCHEDULE ELECTIONS involves a leader or government announcing that elections will take place. This does not include regularly scheduled elections.

Ex: President Thieu announced that legislative elections would take place next month in South Vietnam.

663. To CANCEL OR POSTPONE ELECTIONS involves cancellation or postponement, for whatever reasons, of any elections, whether regularly or specifically scheduled.

Ex: President Thieu called off next week's elections because of renewed attacks by the Vietcong on government outposts.

67. Express Verbal Support

671. APPROVE; ENDORSE; PRAISE; THANKS is any politically supportive statement or statement of appreciation.

Ex: John Conally praised President Nixon's handling of the energy crisis.

672. A PROMISE involves a specific pledge of political or financial support, or a general pledge involving any issue.

Ex: President Nixon promised to furnish summaries of crucial tapes to the Senate Watergate Committee.

673. To AGREE TO FUTURE ACTION; AGREE TO MEET is an agreement to perform some future activity or course of action, to meet in the future at some specific or non-specific date.

Ex: Congressional leaders agreed to meet with President Nixon regarding the energy powers bill as soon as possible.

674. A FORMAL AGREEMENT is a formally signed agreement, contract, or pledge. It includes a joint communique or statement, or a formal promise.

Ex: New York teachers ended the three-week-old teacher strike and agreed to start work tomorrow.

675. To GIVE FRIENDLY WARNING is to give information about something undesired that may occur in the future.

Ex: U.S. oil officials warned that unless the United States changed its Middle East policy, the country might experience a serious recession.

68. Grant Support

681. To GRANT is to give political support, legal support, etc.--support not involving money or material goods. It also involves invitations to meet.

Ex: President Nixon invited Congressional leaders to meet with him to confer on the Middle East situation.

682. To REWARD is to grant material or financial support.

Ex: Howard Hughes donated \$100,000 to President Nixon's campaign for reelection.

683. To YIELD; APOLOGIZE is to yield to an order, submit to arrest, give up possessions or property, to acknowledge the wrongness of a statement or action, or to change a position from non-supportive to supportive.

Ex: President Nixon agreed to yield the Watergate tapes today.

69. Generally Supportive Activity

691. A REQUEST is a query for information, policy, or material assistance, or a plea or appeal for action.

Ex: President Nixon appealed to all Americans to drive at a speed limit of 50 mph to conserve gasoline.

692. To PROPOSE OR URGE is to make a formal proposal involving some course of action, or to urge some future action or policy.

Ex: Senator Kennedy today proposed a National Health Insurance Plan to Congress.

693. To EXPLAIN POLICY; EXPRESS HOPE, CONCERN, FEAR is a statement explaining a policy or action, or expressing some concern about a particular policy or event.

Ex: President Nixon said he would not impose a gasoline tax.

694. To MEET with is always double-coded except when the actor and target are the same code.

695. To REFUSE TO COMMENT

696. MAKE GENERAL COMMENT; EXPRESS HOPE, CONCERN, FEAR

70. Express Verbal Hostility

701. To REJECT; REFUSE; OPPOSE is to turn down or oppose some suggestion, action, or policy.

Ex: AFL-CIO President George Meany opposes Phase 4.

702. To ACCUSE; CHARGE; DENOUNCE is to blame or accuse of an action or policy; to criticize or to disapprove.
- Ex: The ACLU today accused President Nixon of six impeachable offenses.
703. To PROTEST; COMPLAIN is to make a formal or informal protest.
704. To DENY is to deny an accusation or attributed policy or action.
- Ex: President Nixon denies involvement in Watergate break-in.
705. To DEMAND; INSIST is to order an action to take place.
- Ex: Judge Sirica orders President Nixon to release several Watergate tapes.
706. To WARN is to warn of some impending action, or a general threat with no specific consequences.
707. To THREATEN is to threaten with specific consequences if some action is/is not taken.
71. Reduce Relationship
711. To CANCEL; POSTPONE PLANNED EVENT
- Ex: President Nixon cancels his speech scheduled for Friday night.
712. To REDUCE ROUTINE RELATIONSHIP, ACTIVITY
- Ex: General Motors laid off 1500 workers from three plants.
713. To REDUCE ROUTINE RELATIONSHIP, ACTIVITY
- Ex: President Nixon reduced by 24 percent the amount of fuel oil available to major U.S. airlines.
714. To HALT NEGOTIATIONS, TALKS
- Ex: Canadian railroad workers walked out of contract negotiations.
715. To TERMINATE OR VIOLATE AN AGREEMENT is a specific termination or violation of an agreement in force, a pledge or breach of contract.

72. Governmental Sanctions, Non-violent

721. A SANCTION AGAINST AN ORGANIZATION OR GROUP is a governmental sanction or restriction against a non-governmental organization or group of individuals.

Ex: Greek military leaders closed the University for 20 days in the wake of student demonstrations last week.

722. To BAN DEMONSTRATION is an order specifically banning or restricting demonstrators.

Ex: President Nixon attempted to get a court order limiting the number of demonstrators in front of the White House to 50.

723. To OUTLAW A POLITICAL GROUP is to declare illegal a political organization or group of individuals.

Ex: Chile's new military government declared the Marxist Party illegal.

724. To ORDER TO HALT STRIKE, BOYCOTT, PROTEST is to issue an injunction, restraining order, or to call for a halt to.

725. To DECLARE MARTIAL LAW OR STATE OF EMERGENCY is to go on alert, to declare an alert, martial law, or state of emergency (partial or full).

726. A POLITICAL ARREST is an arrest or detainment of a politically significant person as defined in category 611.

728. To EXILE is to voluntarily or involuntarily exit from a country for political reasons.

73. Governmental Sanctions, Violent

731. To EXECUTE is to kill, under legal auspices, a politically significant person as defined under category 611.

732. To ATTACK CROWD; PRODUCE INJURIES OR DEATH is to attack a crowd, in a violent manner, with governmental sanction, using governmental weapons.

733. To PRODUCE INJURY OR DEATH TO INDIVIDUAL NOT IN CROWD is to attack, in a violent manner, with governmental sanction, using governmental weapons, an individual or group of individuals.

74. Governmental Relaxation of Restrictions

741. To LIFT MARTIAL LAW; STATE OF EMERGENCY involves lifting partially or in full martial law, alerts, states of emergency.

742. A RELAXATION OF SANCTIONS OR OTHER RESTRICTIONS involves any partial or complete relaxation of restrictions or sanctions on groups or individuals by the government.

743. To RELEASE PERSONS OR PROPERTY involves giving clemency or parole, releases from custody, return of seized property, etc.

75. Other

751. A CHANGE IN LAWS OR CONSTITUTION is any specific change in the laws, constitution, or structure of government by the government.

APPENDIX II  
INTER-CODER RELIABILITY  
AN INITIAL TEST

This appendix reports on the results of an inter-coder reliability test administered to five coders using DECS to code data on Japan from the Foreign Broadcast Information Service Bulletin (FBIS). The results show the similarity among coders in their choices of both international and domestic events codes. The test was administered in February 1974 after an initial training period for all coders. Reliability scores were calculated among all 10 pairs of coders using Janda's Index of Coder Reliability (C.R.) (Janda, 1969). In addition, product-moment correlations were calculated to determine the similarity among coders of the distribution of events across event codes. The Janda C.R. index is a more stringent reliability test because it tests the "matches" of events coded; that is, it compares the events for similarity of the event code selected. The product-moment correlation measures the similarity of coders' distributions of events across categories coded.<sup>1</sup>

#### Test Presentation

Each coder was given the same five pages of text from FBIS representing a fairly broad sample of Japanese events. The coders were asked to code separately (at home) exactly as they would if they were coding as usual.

#### Measurement

Several reliability scores were reviewed for possible use. Among these were Rummel's Error Measure (Burgess and Lawton, 1973), Kerlinger's ANOVA method (Kerlinger, 1964), and Janda's Coder Reliability Index. The Janda measure is as follows:

$$C.R. = \sum 2M/N_1 + N_2$$

where C.R. is the coder reliability index, M is the number of "matches" between two coders (a "match" occurs when an event is coded in the same

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<sup>1</sup>That is, a high percentage of "matches" in the coding of events is not necessary for a strong correspondence between two coders' distributions.

category by two coders),  $N_1$  is the total events coded by coder 1, and  $N_2$  is the total events coded by coder 2.

The reliability scores were computed between all 10 pairs of coders. Table A-1 presents the reliability scores for all events coded, and for only international events coded.

TABLE A-1

<u>Pair</u>	<u>All Events</u>	<u>International Events</u>
AB	.88	.77
AC	.69	.77
AD	.64	.71
AE	.68	.83
BC	.66	.68
BD	.53	.63
BE	.59	.61
CD	.55	.64
CE	.54	.64
DE	.66	.77
Average C.R.	.64	.71

The average reliability scores were satisfactory. However, in order to increase reliability in coding, particular problems needed to be isolated. One problem was that differently trained coders had trouble differentiating between certain types of domestic and international events, particularly comments. Coders who originally worked on the WEIS coding scheme tended to code most comments as international events, while coders who originally worked on DECS tended to code more comments as domestic events. Table A-2 shows the reliability index when comments (both international and domestic) were eliminated from the data.

TABLE A-2

<u>Pairs</u>	<u>C.R. (no comments)</u>
AB	.76
AC	.74
AD	.84
AE	.95
BC	.65
BD	.73
BE	.80
CD	.67
CE	.74
DE	.84
Average C.R.	.77

Reliability scores were generally better (an increase from .64 to .77) when comments were excluded from the data.

Table A-3 presents the results of the second test--the product-moment correlations. In this test, the cases were event codes, the variables were coders, and the values were the number of events coded by each coder.

TABLE A-3

<u>Pair</u>	<u>All Events</u>	<u>International Events</u>
AB	.98	.94
AC	.92	.83
AD	.92	.84
AE	.76	.97
BC	.53	.75
BD	.77	.81

TABLE A-3 (Con't)

<u>Pair</u>	<u>All Events</u>	<u>International Events</u>
BE	.74	.97
CD	.71	.68
CE	.65	.75
DE	.88	.88
Average R	.78	.85

Table A-4 summarizes the results of both tests.

TABLE A-4

	Average C.R.	Average R
Domestic & International Events	.64	.78
International Events	.71	.85
Events without Comments	.77	---

#### Interpretation of Results

The results of both tests were considered satisfactory for a complex coding scheme such as DECS. In general, the first test (the C.R. Index) produced results less positive than the second (R). The C.R. test is more stringent, measuring the exact match of each coded event while the R measures only the distribution of events across event codes. There are still some problems other than the above-mentioned comment problem. To solve the comment problem, new, more explicit rules about coding comments

were given to coders. A conference with the DECS coders was arranged to discuss the results of the reliability tests and to isolate and correct specific coding problems.

APPENDIX III

AGGREGATIONS OF EVENTS AND  
SUBNATIONAL ACTORS/TARGETS

This appendix presents alternative aggregations of events, subnational actors, and subnational targets. These aggregations are called partitions. For each partition, 'Character Position' refers to the position of the aggregation in the category file. That is, if the character position is "4,4" the retrieval program will read the character in the 4th column of the category file under the appropriate classification (e.g., event, subactor).<sup>1</sup>

The Event Partitions Are:

Rubin 7 Categories

Verbal vs. Physical Events

Domestic Event Value Issues

Extraordinary vs. Non-Extraordinary Events

WEIS vs. DECS vs. Domestic Events

Governmental Response

The Subnational Actor/Target Partitions are:

Governmental vs. Non-Governmental

26 Categories

Government/Party Aggregation

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<sup>1</sup>For more detail on the retrieval program and partitions, see Moore (1974).

EVENT PARTITION # 1: RUBIN 7 CATEGORIES  
(Character Positions: 4,4)

<u>Basic Concept</u>	<u>DECS Code</u>	<u>DECS Event</u>
1. Military Incidents	223	Military engagement
2. Coercion	150	Issue order, insist on compliance
	160	Give warning
	171	Threat without specific negative sanctions
	172	Threat with specific non-military negative sanctions
	173	Threat with force specified
	174	Ultimatum, time limit specified
	182	Military mobilization, exercise or display
	195	Break diplomatic relations
	201	Order personnel out of country
	202	Expel organization or group
	212	Detain or arrest persons
3. Pressure	111	Turn down proposal, reject protest, etc.
	112	Refuse, oppose, refuse to allow
	121	Charge, criticize, blame
	131	Informal complaint
	132	Formal complaint or protest
	141	Deny an accusation
	191	Cancel or postpone planned event
	192	Reduce routine international activity
	193	Reduce or halt aid
	194	Halt negotiations
4. Communication/ Consultation	025	Explain policy or future position
	031	Meet at neutral site, send note
	032	Visit, go to
	033	Receive visit, host
	062	Give state invitation
	091	Ask for information
	094	Request action, call for
	101	Offer proposal
	102	Urge or suggest action or policy
5. Support/Agreement	041	Praise, hail
	042	Endorse other policy or position
	051	Promise own policy support
	052	Promise material support
	053	Promise other future support
	054	Assure, reassure

<u>Basic Concept</u>	<u>DECS Code</u>	<u>DECS Event</u>
5. Support/Agreement (Continued)	064	Grant privilege, diplomatic recognition, etc.
	071	Extend economic aid
	072	Extend military aid
	073	Extend other assistance
	081	Make substantive agreement
	082	Agree to future action or procedure
6. Reconciliation	013	Admit wrongdoing, retract statement
	061	Express regret, apologize
	065	Suspend negative sanctions, truce
	066	Release or return persons or property
7. Military Disengagement	011	Surrender, yield to order
	012	Yield position, retreat, evacuate
8. Other International Events	014	Apologize
	021	Decline comment
	023	Comment on situation
	043	Physically demonstrate in support of
	055	Promise information to
	063	Grant asylum
	067	Increase # of consulates in
	068	Establish legation in
	069	Open embassy in, increase embassy personnel
	074	Give friendly notice of impending harm to
	083	Agreement goes into effect
	084	Agreement expires
	092	Ask for policy assistance
	093	Ask for material assistance
	095	Appeal
	096	Request granting of rights/ privileges
	113	Refuse to give information to
	114	Refuse to give rights/privileges to
	115	Refuse to give or accept material support
	181	Non-military demonstration
	183	Attempt to cause physical destruction
	196	Increase # of severity of legal barriers
	197	Decrease # of consulates
	196	Recall minister or ambassador
	199	Terminate or violate agreement
	211	Seize position or possessions
	213	Intrude upon territory
	221	Non-military destructive act
	222	Military injury, destruction - bomb

Basic ConceptDECS CodeDECS Event8. Other International  
Events (Continued)231  
232  
233  
234  
235  
236Establish new organization  
Abolish old organization  
Reorganize existing organization  
Join  
Withdraw from membership in  
Revoke or suspend membership of9. Domestic and Non-  
Interactive Events401-  
751

EVENT PARTITION #2: VERBAL VS. PHYSICAL EVENTS  
(Character Positions: 5,5)

<u>Basic Concept</u>	<u>DECS Code</u>	<u>DECS Event</u>
1. Cooperation	021	Decline comment
	023	Comment on situation
	025	Explain policy, future position
	031	Meet with at neutral site; send note
	032	Visit
	033	Host
	041	Praise, approve
	042	Endorse policy or position
	043	Physically demonstrate in support of
	051	Promise policy support
	052	Promise material support
	053	Promise other future support action
	054	Assure, reassure
	055	Promise information to
	061	Express regret
	062	Give state invitation
	063	Grant asylum
	064	Grant privilege, diplomatic recognition
	065	Suspend negative sanctions
	066	Release, return persons or property
	067	Increase # of consulates
	068	Establish legation
	069	Open embassy, increase embassy personnel
	071	Extend economic aid
	072	Extend military assistance
	073	Give other assistance
	074	Give friendly notice of possible harm to
	081	Substantive agreement
	082	Agree to future action
	083	Agreement goes into effect
	084	Agreement expires
	091	Ask for information
	092	Ask for policy assistance
	093	Ask for material assistance
	094	Request action, call for
	095	Entreat, plead, appeal to
	096	Request granting of rights and/or privileges
	101	Offer proposal
	102	Urge or suggest policy or action

<u>Basic Concept</u>	<u>DECS Code</u>	<u>DECS Event</u>
2. Verbal Conflict	111	Turn down proposal. reject protest, etc.
	112	Refuse, oppose, refuse to allow
	113	Refuse to give information to
	114	Refuse to give rights and/or privileges to
	115	Refuse to give or accept material support
	121	Charge, criticize, blame
	131	Make complaint (not formal)
	132	Make formal complaint or protest
	141	Deny
	150	Issue order, insist on compliance
	160	Give warning
	171	Threat without specific negative sanctions
	172	Threat with specific non-military negative sanctions
	173	Threat with force specified
	174	Ultimatum, time limit specified
3. Physical Conflict	201	Order personnel out of country, deport
	202	Expel organization or group
	211	Seize position or possessions
	212	Detain or arrest persons
	213	Intrude upon territory or property of
	221	Non-military destructive act
	222	Military injury-destruction, bomb
	223	Military engagement
4. Other International Events	011	Surrender, yield to order, submit to arrest
	012	Yield position, retreat, evacuate
	013	Admit wrongdoing, retract statement
	014	Apologize
	181	Non-military demonstration, boycott
	182	Armed force mobilization, blockade
	183	Attempt to cause physical destruction
	191	Cancel or postpone planned event
	192	Reduce routine international activity
	193	Reduce or suspend aid or assistance
	194	Halt negotiations
	195	Break diplomatic relations
	196	Increase # or severity of legal barriers on
	197	Decrease # of consulates
	198	Recall minister or ambassador

<u>Basic Concept</u>	<u>DECS Code</u>	<u>DECS Event</u>
4. Other International Events (Continued)	199	Terminate or violate agreement
	231	Establish new organization
	232	Abolish old organization
	233	Reorganize existing organization
	234	Join
	235	Withdraw from membership
	236	Revoke or suspend membership, expel
5. Non-Interactive Events	401-	
	423	

EVENT PARTITION #2A: DOMESTIC EVENT VALUE ISSUES  
(Character Positions: 5,5)

<u>Basic Concept</u>	<u>DECS CODE</u>	<u>LACS Event</u>
A. Positive words	651	Pro-demonstration
	652	Symbolic demonstration of support
	671	Approve, endorse, praise, thanks
	672	Promise
	673	Agree to future action
	675	Give friendly warning
	692	Propose, urge
B. Positive deeds	674	Formal agreement
	681	Grant
	682	Reward
	683	Yield, apologize
	741	Lift martial law, state of emergency
	742	Relax sanctions or other restrictions
	743	Release persons or property
C. Negative words	638	Non-violent symbolic demonstration
	643	Violent symbolic demonstration
	701	Reject, refuse, oppose
	702	Accuse, charge, denounce
	703	Protest, complain
	704	Deny
	705	Demand, insist
	706	Warn
	707	Threaten
D. Negative deeds	613	Dismissal of politically significant person
	631	Political, general strike
	632	Economic or other strike
	633	Boycott
	634	Anti-demonstration
	635	Attempted coup
	636	Seizure of government property
	637	Seizure of government personnel
	639	Defection
	641	Assassinations
	642	Attempted assassinations
	644	Riot
	645	Mutiny
	646	Sabotage
	647	Terrorism, armed attacks
	648	Guerrilla war
	649	Civil war
	711	Cancel, postpone planned event
	712	Reduce routine relationship

<u>Basic Concept</u>	<u>DECS Code</u>	<u>DECS Event</u>
D. Negative deeds (Continued)	713	Reduce, suspend aid or assistance
	714	Halt negotiations
	715	Terminate or violate agreement
	721	Sanctions against organization or group
	722	Ban demonstration
	723	Outlaw political group
	724	Order to halt strike, boycott, protest
	725	Declare martial law or state of emergency
	726	Political arrest
	727	Curtail press freedom
	728	Exile
	731	Execute
	732	Attack crowd, produce injuries or death
	733	Produce injuries or death to individual not in crowd
E. All other Domestic Events	601	Regular power transfers
	602	Regular executive transfers
	603	Renewal of executive tenure
	611	Appointment of politically signifi- cant person
	612	Resignation of politically signifi- cant person
	621	Irregular power transfer
	622	Dissolution of legislature
	623	Fall of cabinet
	624	Coup d'etat
	625	Revolution
	661	Hold elections
	662	Schedule elections
	663	Cancel or postpone elections
	691	Request
	693	Explain policy
	694	Meet with
	695	Refuse comment
	696	General comment
	751	Change in laws, constitution

EVENT PARTITION #3: EXTRAORDINARY VS. NON-EXTRAORDINARY EVENTS  
(Character Positions: 6,6)

<u>Basic Concept</u>	<u>DECS Code</u>	<u>DECS Event</u>
P. Positive Events	011	Surrender, yield to order, submit to arrest
	012	Yield position, retreat, evacuate
	013	Admit wrongdoing, retract statement
	014	Apologize
	021	Decline comment
	023	Comment on situation
	025	Explain policy, future position
	031	Meet with at neutral site; send note
	032	Visit
	033	Host
	041	Praise, approve
	042	Endorse policy or position
	043	Physical demonstration of support
	051	Promise policy support
	052	Promise material support
	053	Promise other future support action
	054	Assure, reassure
	055	Promise information to
	061	Express regret
	062	Give state invitation
	063	Grant asylum
	064	Grant privilege, diplomatic recognition
	065	Suspend negative sanctions
	066	Release, return persons or property
	067	Increase # of consulates
	068	Establish legation
	069	Open embassy, increase embassy personnel
	071	Extend economic aid
	072	Extend military assistance
	073	Give other assistance
	074	Give friendly notice of possible harm to
	081	Substantive agreement
	082	Agree to future action
	083	Agreement goes into effect
	084	Agreement expires
	091	Ask for information
	092	Ask for policy assistance
	093	Ask for material assistance

<u>Basic Concept</u>	<u>DECS Code</u>	<u>DECS Event</u>
P. Positive Events (Continued)	094	Request action, call for
	095	Entreat, plead, appeal to
	096	Request granting of rights and/ or privileges
	101	Offer proposal
	102	Urge or suggest policy or action
N. Negative Events Minus Q Events	111	Turn down proposal, reject protest, etc.
	112	Refuse, oppose, refuse to allow
	113	Refuse to give information to
	114	Refuse to give rights and/or privileges to
	115	Refuse to give or accept material support
	121	Charge, criticize, blame
	131	Make complaint (not formal)
	132	Make formal complaint or protest
	141	Deny
	150	Issue order, insist on compliance
	160	Give warning
	171	Threat without specific negative sanctions
	181	Non-military demonstration, boycott
	191	Cancel or postpone planned event
	192	Reduce routine international activity
	193	Reduce or suspend aid or assistance
	194	Halt negotiations
	196	Increase # or severity of legal barriers on
	198	Recall minister or ambassador
	201	Order personnel out of country, deport
E. Extraordinary (Q) Events	202	Expel organization or group
	212	Detain or arrest persons
	221	Non-military destructive act
	172	Threat with specific non-military negative sanctions
	173	Threat with force specified
	174	Ultimatum, time limit specified
	182	Armed force mobilization
	183	Attempt to cause physical destruction
	195	Break diplomatic relations
	199	Terminate or violate agreement
	211	Seize position or possessions
	213	Intrude upon property or territory

<u>Basic Concept</u>	<u>DECS Code</u>	<u>DECS Event</u>
E. Extraordinary (Q)	222	Military injury-destruction, bomb
Events (Continued)	223	Military engagement
O. Other International	231	Establish new organization
Events	232	Abolish old organization
	233	Reorganize existing organization
	234	Join
	235	Withdraw from membership in
	236	Revoke or suspend membership of
D. Domestic and Non-	401-	
Interactive Events	751	

EVENT PARTITION #4: WEIS VS. DECS VS. DOMESTIC EVENTS  
(Character Positions: 7,7)

<u>Basic Concept</u>	<u>DECS Code</u>	<u>DECS Event</u>
W. 63 Original WEIS events (see attachment A)		
N. Non-WEIS (DECS) events	014	To apologize
	043	Physically demonstrate in support of
	055	Promise information to
	067	Increase # of consulates
	068	Establish legation
	069	Open embassy, increase embassy personnel
	074	Give friendly notice of possible harm to
	083	Agreement goes into effect
	084	Agreement expires
	096	Request granting of rights and/or privileges
	113	Refuse to give information to
	114	Refuse to give rights and/or privileges to
	115	Refuse to give or accept material support
	183	Attempt to cause physical destruction
	196	Increase # or severity of legal barriers
	197	Decrease # of consulates
	198	Recall minister or ambassador
	199	Terminate or violate agreement
	213	Intrude upon property or territory
	231	Establish new organization
	232	Abolish old organization
	233	Reorganize existing organization
	234	Join
	235	Withdraw from membership in
	236	Revoke or suspend membership
X. Non-Interactive Events	401-	
	423	
D. Domestic Events	601-	
	751	

EVENT PARTITION #5: GOVERNMENTAL RESPONSE  
(Character Positions: 8,8)

<u>Basic Concept</u>	<u>DECS Code</u>	<u>DECS Event</u>
1. Elections	601	Regular power transfer
	602	Regular executive transfer
	603	Renewal of executive tenure
	661	Hold elections
	662	Schedule elections
2. Executive Adjustments	612	Resignation of politically significant person
	613	Dismissal of politically significant person
	621	Irregular power transfer
	622	Dissolution of legislature
	623	Fall of cabinet
3. Peaceful Demonstrations and Non-Violent Sanctions	631	Political, general strike
	632	Economic or other strike
	633	Boycott
	634	Anti-demonstration
	638	Symbolic demonstration
	703	Protest, complain
	721	Sanctions against organization
	722	Ban demonstration
4. Violent Demonstrations and Violent Sanctions	724	Order to halt strike, boycott, etc.
	726	Political arrest
	636	Seizure of government property
	637	Seizure of government personnel
	641	Assassination
	642	Attempted assassination
	643	Symbolic demonstration
	644	Riot
	645	Mutiny
	646	Sabotage
	647	Terrorism, armed attacks
	725	Declare martial law, state of emergency
	727	Curtail press freedom
	731	Execute
	732	Attack crowd, produce injuries or death
	733	Produce injury or death to individual not in crowd
5. Coups and Revolutions	624	Coup d'etat
	625	Revolution

<u>Basic Concept</u>	<u>DECS Code</u>	<u>DECS Event</u>
	635	Attempted coup
	648	Guerrilla warfare
	649	Civil war
6. Other Domestic Events and Non-Interactive Events	401-	
	423	
	611	Appointment of politically significant person
	639	Defection
	651	Pro-demonstrations
	652	Symbolic demonstrations of support
	663	Cancel or postpone elections
	671	Approve, endorse, praise, thanks
	672	Promise
	673	Agree to future action
	674	Formal agreement
	675	Give friendly warning
	681	Grant
	682	Reward
	683	Yield, apologize
	691	Request
	692	Propose, urge
	693	Explain policy
	694	Meet with
	695	Refuse comment
	696	General comment
	701	Reject, refuse, oppose
	702	Accuse, charge, denounce
	704	Deny
	705	Demand
	706	Warn
	707	Threaten
	711	Cancel, postpone planned event
	712	Reduce routine relationship
	713	Reduce, suspend aid or assistance
	714	Halt negotiations
	715	Terminate or violate agreement
	723	Outlaw political group
	728	Exile
	741	Lift martial law, state of emergency
	742	Relax sanctions
	743	Release persons or property
	751	Change in laws, constitution
7. International Events	011-	
	236	

SUBNATIONAL ACTORS/TARGETS PARTITION #1: GOVERNMENTAL vs. NON-GOVERNMENTAL  
(Character Positions: 4,4)

G. OFFICIAL, GOVERNMENTAL

001 NATION

020 UNIDENTIFIED PERSON OR GROUP IN NATIONAL GOVERNMENT

EXECUTIVE

- 100 Unidentified person or group
- 101 Chief or head of state (if distinct from chief of government)
- 110 Chief of government
- 111 Personally
- 119 Other chief of government (e.g., spokesmen for, personal aides to, representatives of)
- Council of ministers or cabinet
- 120 Unidentified person or group
- 121 Prime Minister or chairperson (if distinct from chief of government)
- 125 Other officers
- 129 Other council of ministers

FOREIGN MINISTRIES, DEPARTMENTS, OR AGENCIES

- 150 Unidentified person or group
- Foreign affairs or foreign policy ministry
- 160 Unidentified person or group
- 161 Secretary or minister of foreign affairs; spokesmen
- 165 Foreign ambassadors
- 169 Other foreign affairs
- 170 Foreign trade ministry (if distinct)

DEFENSE MINISTRY

- 200 Unidentified person or group
- 201 Secretary or minister of defense and spokesmen
- 210 Army, Army staff
- 230 Navy, Navy staff
- 250 Air Force, Air Force staff

270 Military intelligence  
272 Mixed or undifferentiated forces  
279 OTHER FOREIGN MINISTRIES, DEPARTMENTS, AND AGENCIES

281 Foreign intelligence, non-military  
285 Border security forces  
299 All other foreign ministries

DOMESTIC MINISTRIES OR DEPARTMENTS

300 Unidentified person or group  
302 Agriculture and food  
304 Economics, finance, commerce, trade  
306 Health, education, welfare  
308 Transportation/communications  
310 Internal security  
312 Justice  
313 Natural resources  
314 Other domestic ministries  
317 National police

GOVERNMENT ENTERPRISES

320 Unidentified person or group  
322 Agricultural, fisheries  
324 Industrial  
326 Trade and science  
329 Mixed and other

399 OTHER EXECUTIVE BRANCH

LEGISLATIVE

400 Unidentified person or group  
402 Officers of  
404 Committees and commissions  
Regionally or organizationally representative legislature  
420 Unidentified person or group  
422 Officers of  
424 Committees and commissions

Population representative legislature

- 440 Unidentified person or group
- 442 Officers of
- 444 Committees and commissions
- 479 Other national legislative organizations

JUDICIAL

- 480 Unidentified person or group
- 482 Supreme Court, highest tribunal
- 489 Other

499 MIXED AND OTHER NATIONAL GOVERNMENT

REGIONAL GOVERNMENT

U. UNOFFICIAL, NON-GOVERNMENTAL

- 500 Unidentified person or group
- 510 Executive
- 530 Legislative
- 578 Judicial
- 579 Mixed and other regional government

LOCAL GOVERNMENT

- 580 Unidentified person or group
- 582 Executive
- 588 Legislative
- 594 Judicial
- 599 Mixed and other local government

ORGANIZATIONS

- 702 Ruling party
- 703 Leftist/Socialist/Communist
- 704 Periodic congresses or conventions
- 705 National or central committees
- 706 Chairman, spokesman, delegation
- 707 Other
- 708 Centrist

709 Periodic congresses or conventions  
 710 National or central committees  
 711 Chairman, spokesman, delegation  
 712 Other  
 713 Rightist/Fascist  
 714 Periodic congresses or conventions  
 715 National or central committees  
 716 Chairman, spokesman, delegation  
 717 Other  
 718 Opposition party  
 719 Leftist/Socialist/Communist  
 720 Periodic congresses or conventions  
 721 National or central committees  
 722 Chairman, spokesman, delegation  
 723 Other  
 724 Centrist  
 725 Periodic congresses or conventions  
 726 National or central committees  
 727 Chairman, spokesman, delegation  
 728 Other  
 729 Rightist/Fascist  
 730 Periodic congresses or conventions  
 731 National or central conventions  
 732 Chairman, spokesman, delegation  
 733 Other  
 734 Ruling coalitions  
 735 Leftist/Socialist/Communist  
 736 Periodic congresses or conventions  
 737 National or central committees  
 738 Chairman, spokesman, delegation  
 739 Other  
 740 Centrist  
 741 Periodic congresses or conventions  
 742 National or central committees  
 743 Chairman, spokesman, delegation

- 744 Other
- 745 Rightist/Fascist
- 746 Periodic congresses or conventions
- 747 National or central committees
- 748 Chairman, spokesman, delegation
- 749 Other
- 750 Opposition coalitions
- 751 Leftist/Socialist/Communist
- 752 Periodic congresses or conventions
- 753 National or central committees
- 754 Chairman, spokesman, delegation
- 755 Other
- 756 Centrist
- 757 Periodic congresses or conventions
- 758 National or central committees
- 759 Chairman, spokesman, delegation
- 760 Other
- 761 Rightist/Fascist
- 762 Periodic congresses or conventions
- 763 National or central committees
- 764 Chairman, spokesman, delegation
- 765 Other
- 766 Other

763 INSURGENTS AND POLITICAL TERRORISTS

769 OTHER ORGANIZATIONS

ECONOMIC ORGANIZATIONS

- Producers of goods and services
- 770 Unidentified person or group
- 772 Agricultural, fishing
- 774 Industrial
- Trade and service
- 776 Unidentified person or group
- 777 Scientific and technical
- 781 Artistic

- 785 Educational  
Non-governmental media  
790 Unidentified person or group  
791 Broadcast  
793 Press  
798 Other  
799 Other  
810 Trade or labor unions  
820 Trade associations

830 OTHER ECONOMIC ORGANIZATIONS

RELIGIOUS ORGANIZATIONS

- 850 Unidentified person or group  
852 Christian  
853 Catholic  
854 Protestant  
856 Jewish  
858 Hindu  
860 Buddhist  
862 Moslem  
863 Other

870 ETHNIC/TRIBAL ORGANIZATIONS

875 WOMEN'S ORGANIZATIONS

891 STUDENTS' ORGANIZATIONS

892 FOREIGN REFUGEE/RESIDENT ORGANIZATIONS

893 CULTURAL, FRIENDSHIP ASSOCIATIONS, GROUPS

899 OTHER ORGANIZATIONS

INDIVIDUALS AND GROUPS OF INDIVIDUALS NOT CONSTITUTING A FORMAL ORGANIZATION

POLITICAL

- 900 Pro-government  
901 Leftist/Socialist/Communist  
902 Centrist

903 Rightist/Fascist  
904 Opposition  
905 Leftist/Socialist/Communist  
906 Centrist  
907 Rightist/Fascist  
908 Other

ECONOMIC/OCCUPATIONAL

912 Agricultural, fishing  
913 Industrial  
914 Workers in general  
915 Management  
Trade and Service  
916 Scientists and engineers  
918 Artists, writers, musicians  
920 Educational (administrative, teachers)  
922 Press  
929 Other

RELIGIOUS

930 Christian  
931 Catholic  
932 Protestant  
945 Jewish  
937 Hindu  
939 Buddhist  
941 Moslem  
949 Other

951 ETHNIC/TRIBAL

955 RACIAL

958 WOMEN

971 YOUTH UNDER 20

973 UNDIFFERENTIATED "INTELLIGENCIA"

975 APPARENTLY UNORGANIZED AND SPONTANEOUS

976 PEOPLE AS A WHOLE; PUBLIC IN GENERAL

981 INDIVIDUALS

983 FORMER "HIGH-RANKING" GOVERNMENT OFFICIALS

985 SPECIFIC AREA OR REGION

X. UNCLASSIFIABLE

700

701

998 FOUR OR MORE PERSONS/GROUPS

999 OTHER, NOT SPECIFIED TARGET

SUBNATIONAL ACTORS/TARGETS PARTITION #2: 26 CATEGORIES

(Character Positions: 5,5)

A. EXECUTIVE

001 NATION

020 UNIDENTIFIED PERSON OR GROUP IN NATIONAL GOVERNMENT

EXECUTIVE

- 100 Unidentified person or group
- 101 Chief or head of state (if distinct from chief of government)
- 110 Chief of government
  - 111 Personally
  - 119 Other chief of government (e.g., spokesmen for, personal aides to, representatives of)
- Council of ministers or cabinet
  - 120 Unidentified person or group
  - 121 Prime Minister or chairperson (if distinct from chief of government)
  - 125 Other officers
  - 129 Other council of ministers

B. FOREIGN AND DEFENSE

FOREIGN MINISTRIES, DEPARTMENTS, OR AGENCIES

- 150 Unidentified person or group
  - Foreign affairs or foreign policy ministry
- 160 Unidentified person or group
- 161 Secretary or minister of foreign affairs; spokesmen
- 165 Foreign ambassadors
- 169 Other foreign affairs
- 170 Foreign trade ministry (if distinct)

DEFENSE MINISTRY

- 200 Unidentified person or group
- 201 Secretary or minister of defense and spokesmen
- 210 Army, Army staff
- 230 Navy, Navy staff

- 250 Air Force, Air Force staff
- 270 Military intelligence
- 272 Mixed or undifferentiated forces
- 279 OTHER FOREIGN MINISTRIES, DEPARTMENTS, AND AGENCIES
- 281 Foreign intelligence, non-military
- 285 Border security forces
- 299 All other foreign ministries

C. DOMESTIC MINISTRIES AND GOVERNMENT ENTERPRISES

DOMESTIC MINISTRIES OR DEPARTMENTS

- 300 Unidentified person or group
- 302 Agriculture and food
- 304 Economics, finance, commerce, trade
- 306 Health, education, welfare
- 308 Transportation/communications
- 310 Internal security
- 312 Justice
- 313 Natural resources
- 314 Other domestic ministries
- 317 National police

GOVERNMENT ENTERPRISES

- 320 Unidentified person or group
- 322 Agricultural, fisheries
- 324 Industrial
- 326 Trade and science
- 329 Mixed and other

399 OTHER EXECUTIVE BRANCH

D. LEGISLATIVE

LEGISLATIVE

- 400 Unidentified person or group
- 402 Officers of
- 404 Committees and commissions

Regionally or organizationally representative legislature

- 420 Unidentified person or group
- 422 Officers of
- 424 Committees and commissions
- Population representative legislature
- 440 Unidentified person or group
- 442 Officers of
- 444 Committees and commissions
- 479 Other national legislative organizations

E. JUDICIAL

JUDICIAL

- 480 Unidentified person or group
- 482 Supreme Court, highest tribunal
- 489 Other
- 499 MIXED AND OTHER NATIONAL GOVERNMENT

F. REGIONAL GOVERNMENT

REGIONAL GOVERNMENT

- 500 Unidentified person or group
- 510 Executive
- 530 Legislative
- 578 Judicial
- 579 Mixed and other regional government

G. LOCAL GOVERNMENT

LOCAL GOVERNMENT

- 580 Unidentified person or group
- 582 Executive
- 588 Legislative
- 594 Judicial
- 599 Mixed and other local government

H. OTHER

ORGANIZATIONS

700 Parties  
701 Unidentified person or group  
769 Other  
908 Other

I. RULING PARTY

702 Ruling Party  
703 Leftist/Socialist/Communist  
704 Periodic congresses or conventions  
705 National or central committees  
706 Chairman, spokesman, delegation  
707 Other  
708 Centrist  
709 Periodic congresses or conventions  
710 National or central committees  
711 Chairman, spokesman, delegation  
712 Other  
713 Rightist/Fascist  
714 Periodic congresses or conventions  
715 National or central committees  
716 Chairman, spokesman, delegation  
717 Other

J. OPPOSITION PARTY

718 Opposition party  
750 Opposition Coalitions  
766 Other

K. LEFTIST OPPOSITION PARTY

719 Leftist/Socialist/Communist  
720 Periodic congresses or conventions  
721 National or central committees  
722 Chairman, spokesman, delegation  
723 Other

L. CENTRIST OPPOSITION PARTY

724 Centrist

- 725            Periodic congresses or conventions
- 726            National or central committees
- 727            Chairman, spokesman, delegation
- 728            Other

M. RIGHTIST OPPOSITION PARTY

- 729            Rightist/Fascist
- 730            Periodic congresses or conventions
- 731            National or central conventions
- 732            Chairman, spokesman, delegation
- 733            Other

N. RULING COALITION

- 734            Ruling coalitions
- 735            Leftist/Socialist/Communist
- 736            Periodic congresses or conventions
- 737            National or central committees
- 738            Chairman, spokesman, delegation
- 739            Other
- 740            Centrist
- 741            Periodic congresses or conventions
- 742            National or central committees
- 743            Chairman, spokesman, delegation
- 744            Other
- 745            Rightist/Fascist
- 746            Periodic congresses or conventions
- 747            National or central committees
- 748            Chairman, spokesman, delegation
- 749            Other
- 750            Opposition coalitions

O. OPPOSITION LEFTIST COALITION

- 751            Leftist/Socialist/Communist
- 752            Periodic congresses or conventions
- 753            National or central committees
- 754            Chairman, spokesman, delegation
- 755            Other

P. OPPOSITION CENTRIST COALITION

- 756 Centrist
- 757 Periodic congresses or conventions
- 758 National or central committees
- 759 Chairman, spokesman, delegation
- 760 Other

Q. OPPOSITION RIGHTIST COALITION

- 761 Rightist/Fascist
- 762 Periodic congresses or conventions
- 763 National or central committees
- 764 Chairman, spokesman, delegation
- 765 Other
- 766 Other

R. INSURGENTS

768 INSURGENTS AND POLITICAL TERRORISTS

S. ECONOMIC ORGANIZATIONS

ECONOMIC ORGANIZATIONS

- Producers of goods and services
- 770 Unidentified person or group
- 772 Agricultural, fishing
- 774 Industrial
- Trade and service
- 776 Unidentified person or group
- 777 Scientific and technical
- 781 Artistic
- 785 Educational
- Non-governmental media
- 790 Unidentified person or group
- 791 Broadcast
- 793 Press
- 798 Other
- 799 Other

830 OTHER ECONOMIC ORGANIZATIONS

T. TRADE ORGANIZATIONS

810 Trade or labor unions

820 Trade associations

U. SECTARIAN ORGANIZATIONS

RELIGIOUS ORGANIZATIONS

850 Unidentified person or group

852 Christian

853 Catholic

854 Protestant

856 Jewish

858 Hindu

860 Buddhist

862 Moslem

863 Other

870 ETHNIC/TRIBAL ORGANIZATIONS

875 WOMEN'S ORGANIZATIONS

891 STUDENTS' ORGANIZATIONS

892 FOREIGN REFUGEE/RESIDENT ORGANIZATIONS

893 CULTURAL, FRIENDSHIP ASSOCIATIONS, GROUPS

899 OTHER ORGANIZATIONS

INDIVIDUALS AND GROUPS OF INDIVIDUALS NOT CONSTITUTING A FORMAL ORGANIZATION

V. POLITICAL, PRO-GOVERNMENT

POLITICAL

900 Pro-government

901 Leftist/Socialist/Communist

902 Centrist

903 Rightist/Fascist

W. POLITICAL, ANTI-GOVERNMENT

- 904 Opposition
- 905 Leftist/Socialist/Communist
- 906 Centrist
- 907 Rightist/Fascist

Y. ECONOMIC, INDIVIDUALS

ECONOMIC/OCCUPATIONAL

- 912 Agricultural, fishing
- 913 Industrial
- 914 Workers in general
- 915 Management
- Trade and Service
- 916 Scientists and engineers
- 918 Artists, writers, musicians
- 920 Educational (administrative, teachers)
- 922 Press
- 929 Other

Z. SECTARIAN, INDIVIDUALS

RELIGIOUS

- 930 Christian
- 931 Catholic
- 932 Protestant
- 945 Jewish
- 937 Hindu
- 939 Buddhist
- 941 Moslem
- 949 Other

951 ETHNIC/TRIBAL

955 RACIAL

958 WOMEN

971 YOUTH UNDER 20

973 UNDIFFERENTIATED "INTELLIGENCIA"

975 APPARENTLY UNORGANIZED AND SPONTANEOUS

976 PEOPLE AS A WHOLE; PUBLIC IN GENERAL

981 INDIVIDUALS

983 FORMER "HIGH-RANKING" GOVERNMENT OFFICIALS

985 SPECIFIC AREA OR REGION

X. OTHER

998 FOUR OR MORE PERSONS/GROUPS

999 OTHER, NOT SPECIFIED TARGET

SUBNATIONAL ACTORS/TARGETS PARTITION #3: GOVERNMENT/PARTY AGGREGATION

(Character Positions: 6,6)

1. ALL GOVERNMENT\*

001 NATION

020 UNIDENTIFIED PERSON OR GROUP IN NATIONAL GOVERNMENT

EXECUTIVE

- 100 Unidentified person or group
- 101 Chief or head of state (if distinct from chief of government)
- 110 Chief of government
- 111 Personally
- 119 Other chief of government (e.g., spokesmen for, personal aides to, representatives of)  
Council of ministers or cabinet
- 120 Unidentified person or group
- 121 Prime Minister or chairperson (if distinct from chief of government)
- 125 Other officers
- 129 Other council of ministers

FOREIGN MINISTRIES, DEPARTMENTS, OR AGENCIES

- 150 Unidentified person or group  
Foreign affairs or foreign policy ministry
- 160 Unidentified person or group
- 161 Secretary or minister of foreign affairs; spokesmen
- 165 Foreign ambassadors
- 169 Other foreign affairs
- 170 Foreign trade ministry (if distinct)

DEFENSE MINISTRY

- 200 Unidentified person or group
- 201 Secretary or minister of defense and spokesmen
- 210 Army, Army staff

\* This category corresponds to all subnational actors/targets whose actions are coded in the WEIS collection.

- 230 Navy, Navy staff
- 250 Air Force, Air Force staff
- 270 Military intelligence
- 272 Mixed or undifferentiated forces
- 279 OTHER FOREIGN MINISTRIES, DEPARTMENTS, AND AGENCIES

- 281 Foreign intelligence, non-military
- 285 Border security forces
- 299 All other foreign ministries

DOMESTIC MINISTRIES OR DEPARTMENTS

- 300 Unidentified person or group
- 302 Agriculture and food
- 304 Economics, finance, commerce, trade
- 306 Health, education, welfare
- 308 Transportation/communications
- 310 Internal security
- 312 Justice
- 313 Natural resources
- 314 Other domestic ministries
- 317 National police

GOVERNMENT ENTERPRISES

- 320 Unidentified person or group
- 322 Agricultural, fisheries
- 324 Industrial
- 326 Trade and science
- 329 Mixed and other

399 OTHER EXECUTIVE BRANCH

LEGISLATIVE

- 400 Unidentified person or group
- 402 Officers of
- 404 Committees and commissions
- Regionally or organizationally representative legislature
- 420 Unidentified person or group

- 422        Officers of
- 424        Committees and commissions
- Population representative legislature
- 440        Unidentified person or group
- 442        Officers of
- 444        Committees and commissions
- 479        Other national legislative organizations

JUDICIAL

- 480        Unidentified person or group
- 482        Supreme Court, highest tribunal
- 489        Other
- 499        MIXED AND OTHER NATIONAL GOVERNMENT

2. REGIONAL AND LOCAL GOVERNMENT

REGIONAL GOVERNMENT

- 500        Unidentified person or group
- 510        Executive
- 530        Legislative
- 578        Judicial
- 579        Mixed and other regional government

LOCAL GOVERNMENT

- 580        Unidentified person or group
- 582        Executive
- 588        Legislative
- 594        Judicial
- 599        Mixed and other local government

ORGANIZATIONS

3. RULING PARTIES

- 702        Ruling party
- 703        Leftist/Socialist/Communist
- 704        Periodic congresses or conventions
- 705        National or central committees
- 706        Chairman, spokesman, delegation

707 Other  
 708 Centrist  
 709 Periodic congresses or conventions  
 710 National or central committees  
 711 Chairman, spokesman, delegation  
 712 Other  
 713 Rightist/Fascist  
 714 Periodic congresses or conventions  
 715 National or central committees  
 716 Chairman, spokesman, delegation  
 717 Other  
 734 Ruling Coalitions  
 735 Leftist/Socialist/Communist  
 736 Periodic congresses or conventions  
 737 National or central committees  
 738 Chairman, spokesman, delegation  
 739 Other  
 740 Centrist  
 741 Periodic congresses or conventions  
 742 National or central committees  
 743 Chairman, spokesman, delegation  
 744 Other  
 745 Rightist/Fascist  
 746 Periodic congresses or conventions  
 747 National or central committees  
 748 Chairman, spokesman, delegation  
 749 Other

#### 4. OPPOSITION PARTIES

718 Opposition party  
 719 Leftist/Socialist/Communist  
 720 Periodic congresses or conventions  
 721 National or central committees  
 722 Chairman, spokesman, delegation  
 723 Other

- 724 Centrist
- 725 Periodic congresses or conventions
- 726 National or central committees
- 727 Chairman, spokesman, delegation
- 728 Other
- 729 Rightist/Fascist
- 730 Periodic congresses or conventions
- 731 National or central conventions
- 732 Chairman, spokesman, delegation
- 733 Other

#### 5. OPPOSITION COALITIONS

- 750 Opposition coalitions
- 751 Leftist/Socialist/Communist
- 752 Periodic congresses or conventions
- 753 National or central committees
- 754 Chairman, spokesman, delegation
- 755 Other
- 756 Centrist
- 757 Periodic congresses or conventions
- 758 National or central committees
- 759 Chairman, spokesman, delegation
- 760 Other
- 761 Rightist/Fascist
- 762 Periodic congresses or conventions
- 763 National or central committees
- 764 Chairman, spokesman, delegation
- 765 Other

#### 6. OTHER OPPOSITION

- 766 Other

#### 7. INSURGENTS

768 INSURGENTS AND POLITICAL TERRORISTS

769 OTHER ORGANIZATIONS

8. ALL OTHER

ECONOMIC ORGANIZATIONS

- Producers of goods and services
- 770 Unidentified person or group
- 772 Agricultural, fishing
- 774 Industrial
- Trade and service
- 776 Unidentified person or group
- 777 Scientific and technical
- 781 Artistic
- 785 Educational
- Non-governmental media
- 790 Unidentified person or group
- 791 Broadcast
- 793 Press
- 798 Other
- 799 Other
- 810 Trade or labor unions
- 820 Trade associations
- 830 OTHER ECONOMIC ORGANIZATIONS

RELIGIOUS ORGANIZATIONS

- 850 Unidentified person or group
- 852 Christian
- 853 Catholic
- 854 Protestant
- 856 Jewish
- 858 Hindu
- 860 Buddhist
- 862 Moslem
- 863 Other

870 ETHNIC/TRIBAL ORGANIZATIONS

875 WOMEN'S ORGANIZATIONS

891 STUDENTS' ORGANIZATIONS

892 FOREIGN REFUGEE/RESIDENT ORGANIZATIONS

893 CULTURAL, FRIENDSHIP ASSOCIATIONS, GROUPS

899 OTHER ORGANIZATIONS

INDIVIDUALS AND GROUPS OF INDIVIDUALS NOT CONSTITUTING A FORMAL ORGANIZATION

POLITICAL

- 900 Pro-government
- 901 Leftist/Socialist/Communist
- 902 Centrist
- 903 Rightist/Fascist
- 904 Opposition
- 905 Leftist/Socialist/Communist
- 906 Centrist
- 907 Rightist/Fascist
- 908 Other

ECONOMIC/OCCUPATIONAL

- 912 Agricultural, fishing
- 913 Industrial
- 914 Workers in general
- 915 Management
- Trade and Service
- 916 Scientists and engineers
- 918 Artists, writers, musicians
- 920 Educational (administrative, teachers)
- 922 Press
- 929 Other

RELIGIOUS

- 930 Christian
- 931 Catholic
- 932 Protestant
- 945 Jewish

937 Hindu  
939 Buddhist  
941 Moslem  
949 Other  
951 ETHNIC/TRIBAL  
955 RACIAL  
958 WOMEN  
971 YOUTH UNDER 20  
973 UNDIFFERENTIATED "INTELLIGENCIA"  
975 APPARENTLY UNORGANIZED AND SPONTANEOUS  
976 PEOPLE AS A WHOLE; PUBLIC IN GENERAL  
981 INDIVIDUALS  
983 FORMER "HIGH-RANKING" GOVERNMENT OFFICIALS  
985 SPECIFIC AREA OR REGION  
998 FOUR OR MORE PERSONS/GROUPS  
999 OTHER, NOT SPECIFIED TARGET

APPENDIX IV  
INSTRUCTIONS FOR RETRIEVING JAPAN FBIS DATA  
FROM THE ANNAPOLIS SYSTEM

L.POL\*\*\*: ARPASMRY is the program used to retrieve the Japan FBIS data from Annapolis. ARPASMRY allows a user to select one variable to occupy the columns and another variable to occupy the rows of the data table. The remaining variables may be used as controls to set additional parameters. The variables in the DECS coding system under which the Japan data were collected are:

TIME<sup>1</sup>

The entire time period encompassed by the data collection, aggregated together.

DATE

The data, expressed in 1-week, 2-week, 3-week, or 4-week aggregations (1 week = 7 days).

INTACTOR

A three-digit numeric code for the international entity (nation, international organization, region, or group) which originated the event.

SUBACTOR

A three-digit numeric code for the person or group within the international entity that originated the event.

EVENT

A three-digit numeric code, representing one of 84 possible international events categories, 11 non-interactive events categories, or 75 domestic events categories taken by an international actor and/or subactor.

INTTARG1

A three-digit numeric code for the international entity (nation, international organization, region, or group) receiving the event.

SUBRARC1

A three-digit numeric code referring to the person or group within the international entity receiving the event.

INTTARG2

A three-digit numeric code for the international entity (nation, international organization, region, or group) about which the event occurs.

SUBTARG2

A three-digit numeric code referring to the person or group within the second international target about whom the event occurs.

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<sup>1</sup>Data are currently available from January 1971 through December 1973.

<u>SUBJECT</u>	A three-digit numeric code referring to a general topic of the coded event.
<u>ISSUE</u>	A four-digit numeric code referring to a particular international issue about which the interaction has occurred.
<u>ISSUEPOS</u>	A one-digit numeric code referring to a position--pro, con, or no position--taken with regard to the particular issue coded.

## INSTRUCTIONS<sup>2</sup>

To call the ARPASMRY Program, type:	<u>OLD L.POL***:ARPASMRY</u>
The computer will respond:	READY
You type:	<u>RUN</u>
The computer will ask:	CAT FILE?
You reply:	<u>CACICATS</u>
The computer will respond:	SAVE YOUR CONTROL FILE?
You type:	<u>NO</u>
The computer will ask:	DATE BOUNDARIES INCL 'YRMN': BEGIN,END?
You respond:	<u>ALL,ALL</u>
The computer will then ask:	ROW VAR.?
You respond with any of the variables listed on the previous pages; for example:	<u>DATE</u>
The computer will ask:	PARTITION THIS VAR?
You respond: depending on whether you wish to use one of the partitions <sup>3</sup>	<u>YES</u> or <u>NO</u>

<sup>2</sup>In this section, user input is in capital letters and underlined; computer response is in capital letters, not underlined.

<sup>3</sup>The partitions are explained in Appendix II and in a later section of this appendix.

If you answer YES, the computer will ask:

You respond with 2 numbers separated by a comma; for example<sup>4</sup>

The computer will ask:

You respond with either:

If you choose the select or delete options, the computer will ask:

You reply:

The computer will then ask for the codes which you wish to select or delete (if you choose those options); for example:

You type the code for the variable that you are selecting or deleting; for example:

The computer will continue asking you for codes until you type:

The computer will then ask:

You follow the exact format as in selecting a row variable above.

Next, the computer will ask:

You respond with the name of the variable you wish to control; for example:

If you do not wish to control any variables, type:

If you choose a control variable, the computer will ask:

CHAR POSITS: BEGIN,END?

4,4

'SELECT' 'DELETE' 'ALL' DATE?

SELECT, DELETE, or ALL

AGGREGATE?

NO

DATE?

1

STOP

COLUMN VAR?

CONTROL VAR?

INTACTOR

RUN

PARTITION THIS VAR?

<sup>4</sup>These two numbers represent the position of the character in the category file which represents the partitioned group (e.g., the aggregations). The numbers are listed with each partition in Appendix II.

You respond:  
depending on whether you wish to  
use one of the partitions.

YES or NO

If you wish to use a partition,  
follow the format described above.

The computer will then ask:

'SELECT' 'DELETE' or 'ALL'  
INTACTOR?

You type:

SELECT or DELETE

The computer will respond:

INTACTOR?

You type the code; for example:

740

Continue typing codes you wish to  
select or delete until you are  
finished; then type:

STOP

There are three control possibil-  
ities. Each has the same format as  
the above. If you type RUN at any  
time when the computer asks CONTROL  
VAR.? the computer will end the  
program instructions.

The computer will then proceed to read the data file. When this process is  
completed, the computer will ask a series of questions as follows:

QUESTION

REPLY

TITLE?  
TTY OR 'SEL'ECTRIC?  
'ALL' 'SELECT' OR 'NOZEROS'  
ROW?

Any 10 character title you wish  
TTY if teletype;  
ALL if you wish all rows to be  
printed;  
SELECT if you wish just sums and  
means;  
NOZEROS if you wish rows with all  
zero cells to be deleted.

'ALL' 'SELECT' OR 'NOZERO'  
COLUMN?

All if you wish all columns to be printed  
SELECT if you wish to select only  
sums and means;  
NOZEROS if you have specified NO-  
ZEROS on the rows.

STORE?

NO

The computer will then begin printing out the data table, which will include all data specified (event frequencies) as well as column and row sums and means.

At the end of the printing, the computer will ask:

PRINT MORE DATA VALUES?

You type:

DONE

The computer run is now complete. If you wish to begin a new run, type:

RUN

### PARTITIONS

There are several available partitioning options. First, with regard to date, if you wish to use date, you must select a partition. These partitions are represented as the following CHAR POSITS:

1,3	for 1-week time periods
4,5	for 2-week time periods
6,7	for 3-week time periods
8,8	for 4-week time periods

With regard to event, there are several options:<sup>5</sup>

1,3	for selecting any of the 63 event codes you wish to specify
1,2	for selecting any of the 22 combined events (combevnts) you wish to specify
4,4	for selecting the Rubin seven categories
5,5	for selecting verbal vs. physical events, or domestic events value issues
6,6	for selecting extraordinary vs. non-extraordinary events

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<sup>5</sup>These options are described in Appendix II.

- 7,7 for selecting WEIS vs. DECS vs. domestic events
- 8,8 for selecting government response domestic events

With regard to subactor, subtarget, there are four options:\*

- 1,3 for selecting any codes you wish to specify
- 4,4 for selecting governmental vs. non-governmental events
- 5,5 for selecting 26 categories of sub-actor/sub-target
- 6,6 for selecting government/party aggregation

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<sup>6</sup>These options are described in Appendix II.

## BIBLIOGRAPHY

- BURGESS, P.M., R.W. LAWTON (1972) Indicators of International Behavior: An Assessment of Events Data Research. Beverly Hills, Ca.: Sage Publications.
- JANDA, K. (1969) "A Microfilm and Computer System for Analyzing Comparative Politics Literature." In Gerbner, et al., (eds.) The Analysis of Communication Content. New York: John Wiley & Sons, Inc.
- KERLINGER, F.N. (1964) Foundations of Behavioral Research. New York: Holt, Rhinehart and Winston, Inc.
- MOORE, V. (1974) "Instructions for Retrieving Japan FBIS from the Annapolis System." Arlington, Va.: CACI, Inc. (mimeo)